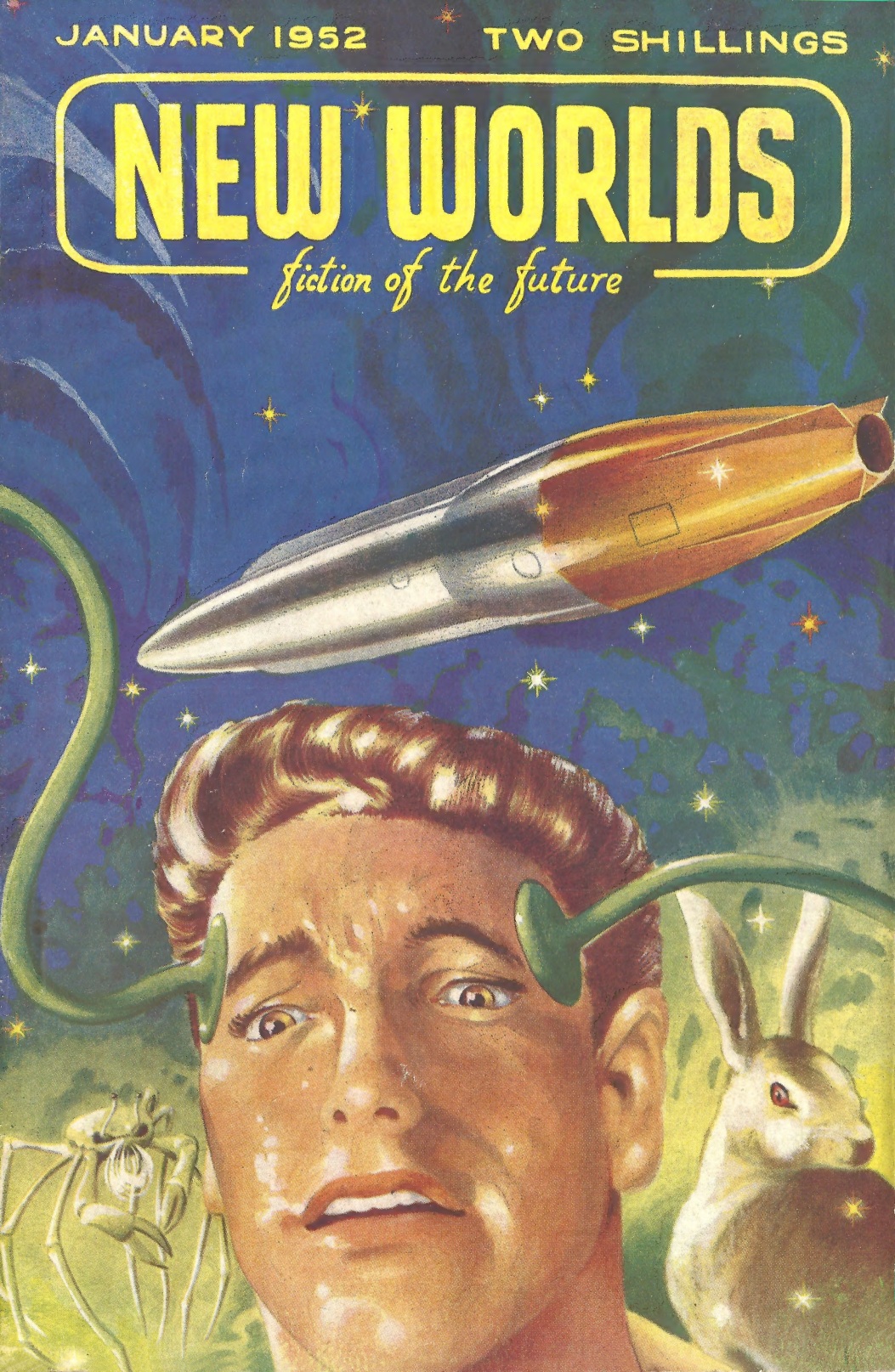
JANUARY 1952 TWO SHILLINGS

NEW WORLDS

fiction of the future



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NEW WORLDS

fiction of the future

VOLUME 5 JANUARY 1952 NUMBER 13

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PEST

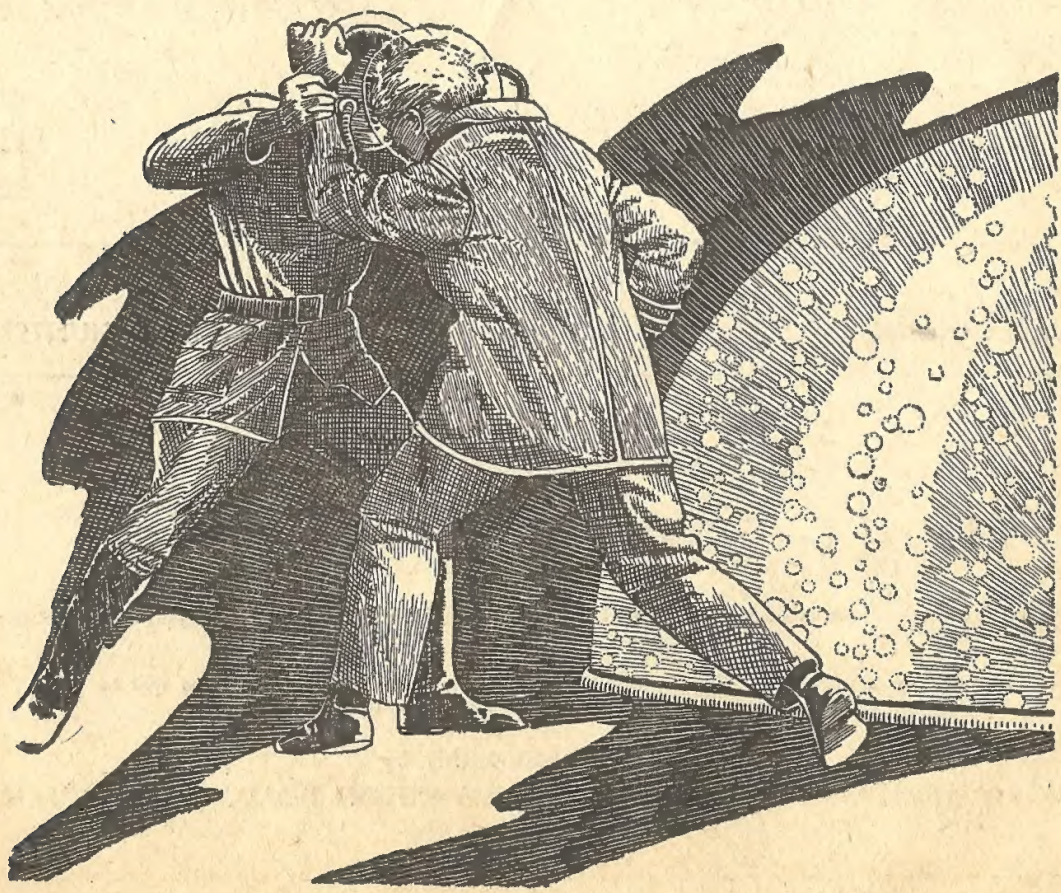
By A. BERTRAM CHANDLER

There weren't any Martians on Mars. Not naturally evolved ones, anyhow. Only the colonists and a couple of hybrid varieties of Earth's fauna. They made an interesting combination.

Illustrated by QUINN

I

Even my being a stretcher case did not save me from the Customs and Immigration routine at Port Gregory. The Old Man was furious and tried to swing the weight of his rank to get me priority—but, if anything, it made



things worse. With anybody obliging, the name of Basset-Wills—with a hyphen—would have secured me a place among the "Bs." As it was I had to take my place at the tail end of the queue with the "Ws."

"And that's what you get for airing a double-barrelled name !" growled Captain Brown. "If you had a sensible name like mine you'd be in the hospital by now."

I pointed out that as plain Peter Wills I should be just where I was now —and that with the preceding Basset I had stood a sporting chance of a quick release. I should have liked to have added that if he hadn't rubbed the Customs officials up the wrong way it would have been better for everybody concerned—but one likes to leave a ship on friendly terms with all and sundry.

Jane, in those days, ranked as an "M"—Jane Meredith—and if the

PEST

name isn't familiar you've never looked into a television screen. But she got permission to stick by me and hold my hand and smooth my fevered brow. And she didn't do it by shouting that she was the great Jane Meredith, the Princess of the Press. She did it by working on the assumption that gold hair piles on more Gs than gold braid. And as for her identity, she did her best to keep it quiet by the wearing of faintly tinted spectacles, a severe hair-do and a very plain costume. The ladies and gentlemen of the news dissemination services have never been over-popular on Mars.

I suppose that she stuck by me because she felt a certain sense of responsibility for my condition. She says to this day that it was all her fault. And I think that it was mine—after all, one expects passengers to do foolish things, and one of the things that we're paid for is to see that they don't.

It was when we had reached the Corner, that point in Space where the Navigator tells the Old Man that it's time to turn round and start deceleration. My job whilst all this was going on was to go the rounds of the decks and to see that nobody was taking advantage of the brief period of free fall to play fairies. The routine is the same for all ships. You start right for'ard and work your way aft. When you begin you have about half-a-dozen cadets with you. In each space you press a button that indicates to Control that all hands are strapped into chairs or bunks, then you leave a cadet on guard to see that nobody slips his safety belt and starts floating around. By the time you get to the last compartment—which in *Martian Queen* was the main lounge—there's only yourself and you act as your own policeman after you've given the all clear.

Well, I finally finished up in the main lounge. Everything had gone remarkably smoothly on this occasion—usually there are at least half a dozen people to whom you have to explain in words of one syllable why they should be strapped down. This, perhaps, had made me careless. I had a hasty glance around, unlocked the cover of the signal button and gave the all clear, then pulled myself to the nearest vacant chair and started to strap myself in. The red warning light on the bulkhead had begun to flash, and we could hear the noise of the gyroscopes starting up as Control began to swing the ship.

Then some old hen sitting next to me gave me a prod in the ribs with a knitting needle.

"Officer !" she cackled. "Why should *she* be allowed to run around loose ?"

I dislike being called "officer," especially in that tone of voice, but my neighbour was now using her weapon as a pointer. I looked in the direction she indicated—and at once decided that if I didn't act quick this was where I got emptied out. There, hanging against the deckhead, was Jane. I didn't know her then—but I found time to think that she looked like a leggy blonde angel floating there above our heads. Perhaps a recording angel—assuming that such beings have gone all modern and use ciné cameras.

"Come down !" I shouted, unsnapping the last buckle.

"Not until I've got this shot !" she replied.

By this time the warning bell had started—and I had to make my choice between giving Control a Stop signal and pulling Jane to a place of safety. To reach the push button meant negotiating one or two corners. To pull

Jane to a position of safety meant straight up and then straight down to my chair. I still think that it was the best choice.

My kick carried me up at such speed that I had to put out my hands to fend myself off from the deckhead. Then I grabbed the girl round the waist and tried to manœuvre for a position suitable for shoving off back to the deck. If she hadn't put up a struggle I might have done it in time. When the warning bell stopped I was still trying, but with a scant split second to go it was hopeless. And when the main drive opened up I knew it was useless trying any more—although I did manage to get in one last kick at the deckhead that would bring us down on the dance floor instead of among the chairs around the perimeter of the lounge. Fortuitously, I was underneath. Apart from a few bruises Jane was unhurt. And when I tried to get up I found that I had a fractured femur. And that was the last thing I knew until I came round in the ship's hospital a few hours later.

So here I was in the main lounge once more—this compartment having been taken over by the port officials as their office. Many was the time that I had watched the formalities of landing being gone through on other worlds, but this was my first trip to Mars. And I had never seen anything so thorough as these Martians.

"You haven't anything in your baggage that you shouldn't ?" whispered Jane, pitching her voice low so that it would not be overheard by the two shore stretcher bearers.

"No," I began, and then it was my turn.

They carried me up to the lie detector, and grasping its handles I had to state that I had neither livestock nor radio-actives. But a mere statement wasn't good enough—even when backed up by the machine. One of the Customs officers went over every piece of baggage with an electroscope, and when he had finished another one, armed with a stop watch, put the articles into what looked like a domestic refrigerator.

"We give 'em all a cooking with HF," the senior man condescended to explain to Jane. "You might have something in your cases and not know about it—the eggs of some insect, for example. Had a case not so long ago —dame had half a dozen parrot's eggs, suspended development jobs, tucked away among her undies. As far as the lie detector went she'd been able to kid herself that they weren't livestock—but she nearly threw a fit when she twigged what we were doing to 'em in the oven . . ."

The Immigration wasn't such a tough hurdle. They sent for the Surgeon to make him swear that all he had put on my certificate of discharge was correct, and that was all. And they gave each of us a respirator—this they said was for use either outside the dome or inside if the power supply to the compressor should fail. We had to sign a receipt for these.

Jane came with me as far as the hospital. There was ample room in the monowheeled ambulance that bore us swiftly and silently through the gleaming corridors of Port Grgeory, and her charm worked on the driver and the two attendants as it had done on the port officials. It was at the hospital door, however, that she met her first setback. She had a woman to deal with there. And it was not visiting hours. And it was no use her coming outside visiting hours. No, not even if she had a dozen press cards to flash, not even if a Second Pilot with a broken leg was the world's hottest

news. Which he wasn't. And he didn't feel like it, either.

I was not sorry when they put me in bed and I was able to fall into a deep and dreamless sleep.

Whilst waiting for Jane the next morning it occurred to me that I had never asked her what she was doing on Mars. I knew her reputation, and it had just occurred to me that Port Gregory might not be too healthy a city in which to spend a convalescence. Where Jane Meredith was things happened. The riot and bloodshed were due to begin at any moment. She had, and still has, a keen nose for news. Some even go so far as to say that she herself is a sort of catalyst and that things just naturally happen around her.

I mentioned all this to Captain Brown, who was my first visitor.

"H'm !" he grunted. "Never thought of that. Suppose you'll be wanting to come home in the old wagon now, broken leg and all. Had enough red tape to cut through to get you ashore—but that old woman Parks swore that with the continual vibration of the drive the bone was not knitting properly. But if you want to take the risk I'll see whoever is in charge of this hospital and see if I can get you out by sailing day."

"Oh, I didn't mean it that way, sir. Just mentioned it as a point of interest. And I suppose that, at bottom, it's no more than a pressman's yarn. And we all know that they can spin some tall ones."

"Perhaps you're right, Basset. But if you do feel that you would sooner be homeward bound with us, just let me know. I don't like leaving one of my officers in this dump—never have had any time for Martians and never will. And . . ."

And then Jane came in.

I liked the way that everybody in the ward followed her with their eyes as she swung down the aisle between the rows of beds. And I liked the way that the Sister on duty and the few women who were there visiting their menfolk looked at her. There was envy, and a cattish dislike, and a reluctant admiration. And she was coming to see me.

And gone was the intentional, severe plainness of arrival day. I'm no hand at describing women's clothes and such—but this Jane Meredith was the Jane who had charmed the worlds over the television networks. Everything was just right from the top of her hatless head to the toes of her little shoes.

I was dimly aware that the Old Man had eased his bulky form up from the chair beside the bed. I have a vague memory of his saying: "Well, Basset, I must be running along now. Have to see the agent and the consul. And I think it might be as well if I did try to get you out and back aboard the ship . . ."

I hoped that the last sentence was in jest . . .

"Hiya, Peter," said Jane. "How's the corpse ?"

"Could be worse. They tell me that they're going to start some kind of ray therapy, and they're feeding me some goo that they get from one of the local plants. Supposed to be an absolute cure-all . . ."

"And when do they reckon to throw you out ?"

"In about two weeks."

"And *Martian Queen* is here for about six days more. H'm."

I didn't like that "h'm." It seemed to bode ill for somebody—probably me. I seemed to remember that this same Jane Meredith was *persona non*

grata on more than one inhabited world of the system and didn't see that it would help my career as an astronaut any if I became involved in any of her escapades. As it was, she had already done my prospects of promotion a bit of no good. But it was unfair to blame her for that—I had slipped up badly and if it had been her leg that was broken and not mine it would have spelled O-U-T.

"Tell me," I said to switch my train of thought on to more pleasant tracks, "what are you doing here ? What's due to happen ?"

"Wish I knew. But something's cooking, Peter, something big. The rabbits are mixed up in it, and the crabs. And I have a feeling that *Collinsia Utilensis* may be involved . . ."

"What *is* this ? *Alice in Wonderland* ?"

"Damn nearly. How's your Martian history ?"

"Lousy. If I'd been on this run before I might know something—but up till now I've been ferrying passengers and freight to and from Venus. Liked the trip, too—but the Big White Chiefs decided that it was time I had a transfer."

"Oh, well. I'll give you a brief synopsis—it'll help me to get my own ideas straightened out.

"Mars, of course, has run through the same pattern of social evolution as the other colonised planets. First of all a collection of settlements—American, British, Russian, Dutch and so on—each little colony owing allegiance to the mother country on Earth. Then, at last, the day when they all began to regard themselves as Martians rather than American, British or what have you. And the inevitable inferiority complex that seems unavoidable with young nations—taking its usual form, the conviction that the Terran Central Government is out to do them dirt, is just waiting for an excuse to send a fleet and invade.

"Now—exports and imports.

"Collins was the biologist with Gregory on the first expedition to Mars. He found the plant that bears his name, the plant that is the only native living thing on Mars. There *were* animals once—but, judging by their remains, they weren't intelligent. It must have taken considerable skill and knowledge on somebody's part to cut the canals—but whoever it was didn't leave so much as a mud hut with four walls and a roof. Not a trace has ever been found of either architecture or artifact.

"But—to return to old Collins' super vegetable.

"It was early recognised that, in its various forms, it would supply every need of Man. Food, clothing, medicines—all growing from the one root. Industrial alcohol they get from it—and the muck that they sell in bottles with an Imported Scotch label . . . And there were certain scents and drugs which, until they could be synthesised, fetched high prices on the Terran market.

"But Man doesn't thrive on a vegetarian diet. Some fool repeated the early Australian experiment and had a few pairs of rabbits shipped out. In spite of the climate, and the impossibly thin atmosphere, one or two survived of those that were turned loose in the open. And they bred. And bred. And started to make serious inroads into the supplies of *Collinsia Utilensis.*

"But there were mental giants in those days. It finally dawned on the other colonies that a nice little war with those responsible for the introduction of the innocent bunnies wasn't getting anybody anywhere. So hostilities were concluded and everybody went into a huddle about ways and means of controlling the pest. Biological control was all the rage in those days—but people were very chary about introducing any very small life form to prey on our furry friends lest it get completely out of hand.

"It was a laddie called Carruthers—who now has the best-hated memory on this cock-eyed world—upon whom the Great Light finally dawned. He remembered reading somewhere that, way back in pre-Atomic days, rabbits had been introduced on to certain islands of Earth's Pacific Ocean. These islands carried visual beacons of some kind that were used by the surface ships of those times, and people had to live on the islands and look after these lights. The idea was the rabbits would provide both a welcome dietary change and sport. They did. For the land crabs. The same little beasts that had overrun Australia couldn't stand up to an armour-plated enemy that followed them down into their burrows.

"Surprisingly enough, the crabs did well on Mars and Carruthers was the hero of the hour. It is only a year ago that they demolished his statue . . ."

"Yes, I remember seeing a recording of it. Carmichael of Extra Terran News covered it . . ."

"Yes. He would. He's a Martian citizen, you know, and has considerable pull with the Censor. Very little leaks out before he's scooped it. But if he'd had any sense he wouldn't have made that newscast of the crabs surrounding a mob of rabbits. Do you know what it reminded me of? Like sheepdogs and a herd of sheep, it was. There were at least three hundred bunnies—and all the time that Carmichael had the scene in the lens of his camera only two were pulled down and eaten. It looked for all the world as though somebody—or *something*—was having the rest herded north along Casartelli's Canal.

"But the crabs. And the rabbits. It finally dawned on somebody that the rabbits were doing *Collinsia* more good than harm. They went mainly for the fruit—and they dropped the seeds all along the canals. Dropped them *and* fertilised them. And remember that these same seeds had resisted all attempts made by the colonists to plant them.

"The rabbits, too, had changed. Man, when he colonises an alien world, brings his own conditions with him. The rabbits, outside the domes, had to adapt themselves to alien conditions. They did. They're big now, and have a lung capacity large enough to handle the thin atmosphere. There may, quite probably, be not a few mutants in their Martian genealogy—but that I wouldn't know. But I do know that every woman on Earth would sell her soul for a coat of Martian bunny . . ."

"Snob value!" I interjected.

"It's not! It's the loveliest fur you ever saw, ever felt. It makes mink look like alley cat . . . But where was I?

"Oh, yes. The rabbits are valuable now. And those land crabs, which have developed into something like boilers on stilts, are playing hell with the Martian economy. Of course when they kill a rabbit they don't eat the fur—but the pelt looks as though it's been through a mincing machine. And

they seem to herd the rabbits away from the traps as though they were doing it on purpose. And they have been known to attack hunters. They . . ."

"Miss Meredith ! Miss Meredith ! Your time was up ten minutes ago."

"Sorry, Sister, I had no idea of how the time was flying."

"Will you be in this evening, Jane ?" I asked.

"No, Peter, I'd better not. There's bound to be a crowd from the ship. And I really must start making some contacts. After all, it's what I.N.S. pays me for. But I'll see you in the morning !"

II

The crowd from the ship was along that night, and every night until she shoved off. They looked after me well, smuggling ashore all kinds of little luxuries on which a very stiff duty should have been payable. And the Old Man came in every morning, as part of his ship's business routine, and Jane came too.

I heard him talking to her the morning before *Martian Queen* was to blast off. "Look after him, Miss Meredith," I heard him say. "Don't let him get into mischief."

"Of course, Captain Brown," replied Jane, doing her best to look like a blonde Sunday schoolbook angel. "I'll see that he keeps away from the low dives. After all, I feel responsible for him as it was really my fault . . ."

"We all of us do silly things, Miss Meredith. And I'm glad that you're here to keep him out of trouble."

Of that I had my doubts—but I kept my mouth shut.

Actually there was no reason why I should not have rejoined before sailing. No reason at all—except that the surgeon who had been handling my case insisted on finishing the job. There was a little professional jealousy there. He hated the idea that poor old Parks—who, in any case, was an Earthman —should scoop the credit.

Jane was with me when *Martian Queen* blasted off. We heard the muffled thunder of her jets as she warmed them up, and then came that peculiar screaming roar of a big rocket in flight. I followed her in my imagination —up through the thin air, up past the orbits of Phobos and Deimos, out and away towards the Sun and Earth. And I felt very lost and lonely here on this arid world where one's Earth citizenship counted for less than nothing. On the other runs you don't get that kind of thing. The mere fact that you are from Home makes you a little tin god . . .

"You'll be out in a week," said Jane.

"So they tell me."

"And there's nothing homeward bound for another five weeks."

"No."

"Would you like a job ?"

"It all depends."

"Quite a nice job. It's like this, Peter. I.N.S. allow me practically unlimited funds—enough to buy a nice little rocket plane. It's essential, really, for getting around on this world—the public transport services are vile. But here's the snag—I have no pilot's licence. Had one once, but . . . Anyhow, skip it. Your licence, they tell me, covers handling any kind of rocket-propelled craft inside atmospheric limits as well as in deep space.

And as your qualifications are international and interplanetary they will hold good for Mars. Right?"

"Yes, but . . ."

"And I can't hire me a pilot for love or money. I can get the ship, but someone has tipped off the Aviators' Guild that I'm not, repeat, not to hire any help. That Carmichael knows I'm here, and knows I'm on to something. But they can't stop me from hiring you."

"Provided that I want to be hired. But if I were you I'd keep it quiet —Carmichael might have enough pull to have me kept in my virtuous couch until the next homeward bound ship."

On the whole I wasn't sorry when they threw me out of the hospital. Not that they were a bad crowd—and they certainly looked after me well. And their continual harping on the theme of how vastly superior Martian medical science was to that of Earth just failed to register—all that I knew was that they had made a remarkably good job of my leg. And I didn't mind when they told me all about their marvellous *Collinsia*—and found amusing rather than otherwise the impression they gave that they, personally, had created the beastly thing out of nothing. But it was quite a plant—from the same root there were liable to be a dozen different, specialised forms, so unlike as to seem to be different species. And the difference went far deeper than externals—the actual chemistry of leaves and stem would be of an extreme diversity.

And that wasn't all. It seemed that the chemistry was liable to change. Certain leaves of *Collinsia* had long been used as a sort of smoking tobacco—and very palatable it was too. And now a subtle difference had crept in. Very hard to detect unless one knew it was there. What had been a harmless, pleasant narcotic was now a dangerous, habit-forming drug. The seeds of the apple-like fruit—which alone was standard—were largely used for spices. And those spices had, of late, developed poisonous characteristics. But now the chemists in the various processing plants were on the alert there was no longer any danger.

But to get back to the hospital, it was amusing to listen to the nurses at one moment running down Earth and all things Earthly, and then the next avid for information about the planet they affected so to despise.

It was the Consul who took care of me the day that I left. Jane was out of the city, I learned later, taking a run in a hired launch along the main canal running north and south from Port Gregory. But she had told me of her intentions the previous day so I was not unduly disappointed. The Consul wasn't a bad old boy, although a trifle pompous, and insisted on supporting me to the monotaxi waiting outside the hospital doors. And he had certainly done me well in the matter of accommodation—although it would be I.C.C. who was paying. He had found me a three-room service apartment in the very periphery of the city, an apartment whose transparent side walls overlooked the desert landing fields of the spaceport. Not that there were any deep space ships in now to make me homesick—although there was an abundance of little rockets—both planes for use inside atmospheric limits and larger vessels capable of making the run to Phobos or Deimos. But it was a mistaken kindness. The average spaceman always remembers what happened when *King Charles' Wain* sat down hard in the middle of Manchester and prefers the Terran practice, subsequent to that

spectacularly unpleasant incident, of keeping the ports as far as possible from large centres of population.

There were flowers on the table of the living room, a large vase of tastefully arranged, gorgeous blossoms. I guessed that this would be my first visual introduction to the fabulous *Collinsia*. There was a note, too, propped against the side of the vase. The writing was unfamiliar, but I guessed who it was from.

"Miss Meredith sent the blossoms," volunteered the Consul. He made an *harumphing* sound and caressed the ends of his long moustache. "A very charming young lady . . ."

I agreed absently whilst opening the envelope. Apologising, I read the note. It was short and to the point.

"*Sorry I wasn't on hand to meet you out*," it said, "*but I heard reports that a large covey(?) of crabs had been sighted advancing upon the city along the bank of Casartelli's Canal. Everything I take will have to go through the Censor—but it may be worth while. Have told the Walrus to look after you. Give him my love and a couple or so drinks. You'll find the bottle in the cabinet*

by the teleaudio. Will call for you, if back, at nineteen thirty.—J."

So I found the bottle and gave the Walrus his drinks.

We chatted a while of this and that, and having found out what Jane's very apt name for him was I found it hard to keep a straight face. It was all getting to be too, too Lewis Carroll. Crabs and rabbits, and now the Walrus. It was a pity that my name wasn't Carpenter . . . But after the third drink I began to feel like the Dormouse.

"You'll have to excuse me," I said, yawning, "but I find this local brew a trifle strong . . ."

The Walrus looked at his watch.

"And I must be running along, Mr. Basset-Wills. Remember me to Miss Meredith when you see her again. You must both of you come up to the Consulate some night for dinner. And don't forget—I'm here to be of service . . ."

Then he left, and I decided to see if the settee along one wall was as soft as it looked. And the next I knew was Jane shaking me and telling me to look lively and get my boozing suit on.

My number ones would certainly have been out of place in the places to which I was taken that night. Jane must have explored the city very thoroughly during my spell in hospital—explored it with an eye to local colour of the more meretricious variety. It wasn't to the East Gate she took me—that was the doorway through which traffic from the air and spaceport entered. It was neither the North nor the South Gate—the taverns in their vicinity were patronised by the crews of the powered lighters that plied their trade along the canals. The West Gate was the obvious place to look for information of the kind for which she was seeking. Through it came the land traffic, the big tractors called "sand-cats" or "desert schooners," the prospectors, the trappers and hunters.

It wasn't too savoury a locality. It was clean and well lit, but over all hung that indefinable air of raffishness. And Jane managed to blend well with the background. It occurred to me later that she must have had long and educational experience of this kind of thing, but at the time I felt more than a little hurt that she should cheapen her appearance as she had done.

But it was done cleverly. Just a little too much make-up, just a very slight discordance in the colour scheme of blouse and skirt. The rest was a matter of bearing, of speech and accent. And it was enough. Even her hair seemed to take on a brassy tint. The handbag, too. It was larger and more ornate than sanctioned by good taste. But it had to be . . . even a miniature camera when accompanied by a few spare spools is quite bulky. And the glittering decorations helped to conceal the lens.

As for me—Jane gave me up as hopeless.

"You look like just like what you are," she said, "a mug of a spaceman taken in tow by a designing blonde. But it doesn't really matter . . ."

From my apartment we walked to the nearest corridor through which the westbound moving way ran. Jane seemed to know the city like a native and transferred from level way to ramp and again to level way until we must have reached what she called the ground floor. In a short space of time we came to the end of the run, stepped out into a vast, domed hall. At one side of it were the doors of the airlocks—big for vehicular traffic small for the rare pedestrians. It was noisy, too, on this level, the air compressors can't

have been too far distant and three big tractors had just come in and were discharging bales of furs on to an endless belt running into the heart of the city. And the polished deck was gritty underfoot—in spite of all measures taken to prevent it some of the fine Martian sand was certain to seep in.

III

Not far from where we were standing was a flickering sign. EDDY'S BAR AND GRILL, it proclaimed. FINEST IMPORTED EATS AND DRINX. Somebody came out as we watched, staggering slightly, and through the open door poured a wave of sound and scent, the latter composed of cheap liquor, hot cooked meats and tobacco smoke.

"This'll do for a start," said Jane. She put up her hand, ruffled her hair a little more, and dragged me towards the entrance.

Inside it was typical of such places on all the worlds. I knew, without sampling its wares, that the imported drinks would be merely the local brew with synthetic flavouring and a fancy bottle label added. And the imported food would be the ubiquitous crab and rabbit and *Collinsia* camouflaged by a cook whose ambition would, inevitably, be far in excess of his ability. And the music and entertainment were provided by juke boxes on the screens of which the same old scantily clad lovelies went through the same old gyrations to the same old strains of last year's swing.

Not that I minded particularly, I rather like such places. But I was ashamed to bring Jane in here. Of course, she was bringing me in, but I'd forgotten that.

We chose a table near the bar, and when the slatternly waitress came to clear the decks of the debris left by the last diners and to take our orders Jane put on her act. It was wasted really, there were only the girl and a couple of barflies to hear her impersonation of a spaceport blonde fleecing a poor, innocent spaceman. But in a voice that she deliberately coarsened just the right amount she ordered everything that was most expensive. Oysters she wanted—they must be imported—and champagne at an imported wine price.

I must have winced. After all—the only money I had was such pay as had been due when I paid off from the *Queen*. And it would have to last me until the next homeward bound ship. But— "Cheer up, duckie," whispered Jane. "The I.N.S. is paying for this. And you're on our payroll now, anyhow."

Some of the loungers must have heard the lavish order being given—as they were intended to. There was one gentleman who figured that he had as much right to a share of my wad as Jane. He left the bar to stand up by itself and sauntered across to our table. He pulled a chair up, sat down facing us.

"Thought you was a stranger here, Jack," he remarked. "Just out from Home ?"

"Yes."

"Hope I'm not talkin' out o' turn, but I don't like ter see a nice young fella like yerself gettin' in with the wrong sort o' people from the very start . . ."

"Meanin' me ?" demanded Jane.

"Since you're askin', sister, yes. Come ter think of it—haven't seen yer around here before. Who's yer patron ?"

Jane's voice was sullen as she replied.

"Haven't got one yet. Just come in from Tamaragrad—couldn't stand them Russians at any price. But what's it to you ?"

"Oh, nothin', nothin'. Just that I don't want ter see the young fella skinned. An' what's it worth for me not ter pass the word around ter the girls that there's a freelance operatin' on their territory ?"

The situation looked like becoming ugly. I shot Jane a worried glance, but she was enjoying herself. I began considering ways and means of getting her out of Eddy's Bar and Grill and, at the same time, shaking off this gentleman who had taken my moral welfare so much to heart.

By this time the champagne and the oysters had arrived. The bottle was in a regulation ice bucket and, if the label was to be believed, was good. And when I saw the bill—the girl insisted on payment on delivery—I thought that they must have brought us bottled radium by mistake. The oysters were real, imported oysters—fresh from the can. And the price of them started me doing sums in my head involving the number of cans and the amount of freight payable per case. Unasked, the waitress set out three glasses. I was going to protest, but Jane kicked me hard under the table. Then she started treading on my foot. It was some little time before I had a rush of brains to the head and decoded: *Go and powder your nose . . .*

Well, orders were orders. I got up, and asked my guide, philosopher and friend where to go. He insisted on coming with me, and all the time kept up a running fire of admonition and advice. His greatest ambition in life was to take me to a place kept by a friend of his where the drinks were so much better and so much cheaper, where one could have a friendly game of cards, and where one could meet some really respectable girls. And I was half listening and all the time wondering whether Jane had intended that I should lay him out when I got him to myself. It didn't seem a very good idea, apart from the fact that he probably carried arms of some sort he was bigger than me. And I was ready to be convinced that he knew far more about rough-and-tumble fighting than I had dreamed of.

So we wandered back to our table—and when I saw the way that he looked at Jane I was sorry that I hadn't taken a poke at him. But that girl actually gave him a welcoming smile and was pouring out his glass of wine before he sat down. Having an innocent mind I should not have expected any deception. But our friend did not have an innocent mind . . .

Jane, having murmured the conventional "happy days" had her own glass to her lips when he reached across and took it. "Pardon me," he said, "but your mug is chipped, sister. Take mine !" If he had been a man of normal sensibilities the glare from Jane's blue eyes would have withered him. But he just leered and passed his own glass to the girl. "Happy days !" he said, drained the wine and went out like a light.

"It always works," said Jane happily. "At least, with that type. Here's to Mickey. All right, you can drink yours. It's quite safe." Then: "*What's that* ?"

The door to the outside was open, a group of men were standing just inside it, on the verge of departure, talking. The two juke boxes were

momentarily silent, and over the loud, coarse voices the noises of the city drifted in. Mainly mechanical they were—the murmur of wheeled transport, the whine of compressor fans and the faint, rhythmic clatter of the nearest moving way. And there was someone outside singing, singing and slowly approaching, singing an old, old song in a cracked voice.

"*. . . come a-waltzing Matilda with me !*
Up came the squatter, mounted on his thoroughbred,
Down came the troopers—one, two, three;
' Where's that jolly jumbuk you've got in your tucker bag ?'
You'll come a-waltzing Matilda with me !
Waltzing Matilda, waltzing Matilda,
You'll . . ."

The singer drew abreast of the doorway—and passed on.

"*. . . come a-waltzing Matilda with me !*"

"Come *on* !" cried Jane. "I smell news, *news* !"

As she jumped to her feet the remains of the bottle of synthetic champagne were upset, running over the table, cascading into the lap of the receiver of knock-out drops. But nobody worried, except the slatternly waitress.

"Here !" she demanded. "What have yer done to Whitey Snow ?"

"*He'll* be all right," I said hopefully. "Just let him sleep it off !"

"*Give the wench a ten spot to keep quiet* !" came in an intense whisper from the pride of the I.N.S. "*And ask her . . .*"

The note changed hands.

"Who was that singing outside ?" I said casually.

"Singing ? Oh, *him*. That was Mad Mullins, the Australian. Last of the Swagmen he calls himself. But what do you want with the likes of him ?"

"Nothing, nothing. Just curious . . ."

And I elbowed my way through the crowd with a certain haste. Jane was already streaking out of the door.

It wasn't hard to track the self-styled Last of the Swagmen. He knew only one song, and he liked it. We followed him out of the main corridor, along a small one running off from it at an angle that was little more than a tunnel. We couldn't see far ahead—the lighting was sparsely spaced and the reflections from the curved, polished walls were confusing. But there floated back to us snatches of the last adventure of the immortal swagman —and an accompaniment to the ballad was the subdued whirring noise that came from Jane's handbag. Evidently all this was worth recording.

And we were gaining on him now. We could see his tall, thin figure, fantastic in the confused lighting, with the bag swinging on his back. The bag—the "swag." Waltzing Matilda herself. And I was still wondering what it was all about as he led us down and down and down.

And then the noise of machinery, faint at first but rapidly becoming louder, added its repetitious music to the monotony of the song coming from ahead. We lost sight of Mullins as he turned a bend of the tunnel, then, as we rounded the angle, we saw before us a platform past which was running a moving way. The gaunt old man stood poised for a moment on the brink of this fast flowing mechanical river, then jumped. We saw him stagger as he fought to retain his balance, and then he was gone, carried into the obscurity of the tube into the dark mouth of which the moving way ran.

We hurried down to the platform. Jane, clutching her precious handbag,

was the first to jump. She misjudged the speed of the way and fell heavily, holding the bag up and away from her so that whatever else befell that should not be damaged. I was luckier when I followed, and hurried along the rocking, vibrating surface to Jane's side.

"Are you hurt ?"

"Not permanently. There's a portion of the human anatomy designed to be sat on hard—and I sat on it hard. Very. But now I'm down I'm staying down until we get to wherever we're going. This tunnel is high enough here, but what it will be like later I don't know."

I sat down, too. We knew that Mullins was still with us—from somewhere ahead came a mournful voice informing us that somebody's ghost can be heard as you pass by that billabong, and that Matilda was still in the dance marathon.

We looked around. There was nothing to see. Just bare, rough walls that flashed by at speed, just an occasional dim light that did little beyond making the darkness tangible. More than once we were tempted to crawl forward along the moving way, to see the old madman at close quarters, to find out on what errand he was bound. Had it remained with me I think we should have done. But Jane, after careful consideration, refused to budge. If we made the acquaintance of Mad Mullins now we might find out where he was going and what he intended to do, and if this latter were anything really interesting it might also be spectacularly criminal. And we might feel impelled to stop him. It would be public spirited—but would it be news ? Jane didn't think so.

It was two hours after the start of our dark journey that we saw the glimmerings of brighter light ahead. And then we were abruptly swept out of the tunnel into a large artificial cavern. The moving track curved back upon itself gently, ran back in the direction of Port Gregory through another tunnel which must have run roughly parallel with that through which we had come. But the actual recurvature was hidden under a platform —a platform so designed as to scoop any object off the incoming moving way and send it sliding down a chute. We had no desire to be scooped and chuted, especially since the mad Australian had already left the moving way and was walking, slowly yet purposefully, towards a doorway in the rock opening upon the outgoing track.

There were men working about the doorway, loading crates and boxes upon the conveyor that would bear them to the city. And we saw guards, too, and the glimmer of the light on their automatic weapons.

Mullins approached the door in the rock, slouching forward with the peculiar gait of the hobo, his swag wobbling on his shoulders like a thing alive. Jane had her camera-handbag unlimbered, and I could hear the faint whirr of its mechanism over the clatter of the moving way. She was peering into the viewfinder. "Damn !" she ejaculated, "what *is* the matter with the man's head ? It's coming in fuzzy . . ." Then: "He's wearing his respirator !"

Luckily we had not been long enough on Mars to become careless about carrying the little haversacks with us. The idea that our lives depended upon a series of pumps and fans was still sufficiently novel even to me—after all, in a ship only a breach of the hull can reduce the pressure—to

breed a caution that, if we stayed here long enough, would seem ludicrous. And it was the work of seconds to pull out the transparent headpieces, to connect them up with the oxygen cylinders carried in the same haversacks.

The men loading their crates and packages on to the moving way had stopped working, the guards had challenged Mullins. He was advancing more slowly now, his hands raised above his head. We had approached within a matter of twenty yards or so, then edged behind a stout pillar running from roof to floor to watch developments. We saw Mullins stop, saw him back against the rock wall with the muzzle of a gun in his belly. Whatever was in the swag, I remember thinking, would be crushed against the stone. And whatever was in his bag must have been remarkably quick acting. There was a clatter as the guards dropped their weapons, a concert of thuds as guards and workers fell like ninepins. And Mullins stepped over the body of the man who had prodded him in the belly, vanished through the doorway with the air of one hurrying to keep an appointment.

They weren't dead. Whatever had hit the guards and the workers was not lethal—at least not immediately so. But we could not revive them, and not knowing what gas it was that had been used there was not much that we could do about it. And our best chance of finding help for the unconscious men lay in following Mullins into what was obviously an industrial establishment of some kind.

We saw what it was when we passed through the doorway. The leaves of the door were thick, and made so that when the door was closed they would form an airtight seal. And in structure they were like nothing so much as a sandwich. The ten feet or so between outer and inner surfaces was composed of layers of steel and concrete and lead.

Hurrying along behind Mullins we passed rooms in which machinery of all kinds was working, rooms in which men lay in attitudes of careless sleep. The bag was still giving out its gas, still securing a free passage for the man who carried it. The fact that a draught was setting in from the outer door meant that the cloud of sleep would precede him, that he would not be as much as seen by those who would surely have attempted to stop this unauthorised intruder.

"To hell with this !" I said at last. "This is an atomic power station—and, news or no news, I'm going to stop that crazy old coot from doing whatever he wants to do !" I broke into a run. And then Mullins turned round, saw that he was being followed. And he started running. He was an old man, but he was used to moving in the feeble gravitational field of Mars. And so we were hopelessly outdistanced.

There was little time to lose when we burst into the generator room. The power station was one of the old, long outdated, uranium pile type, superseded long since by the Flackmann Converter to which all matter is a power source. But those old uranium pile stations hang on and hang on. Enormous amounts of capital went into their construction, and they are still paying handsome dividends.

IV

Mullins was already at work when we burst into the generator room. Before their control board lay the engineers of the watch—and the madman, working with skilful deliberation, was striving to bring about that which

they, all their working lives, had bent every effort to prevent.

We could not see what was happening in the pile itself, that was behind feet of lead and concrete. But we could read the labels on the remote control switches—although that came later. We knew, without reading any labels, that the madman was withdrawing screens, inserting additional slugs of uranium, draining the heavy water that was both a moderator and a source of steam for the turbo-generators.

The old man snarled as I flung myself upon him. It was hard to get a grip upon his body—he was still wearing his outdoor clothing, heavy drill with a fur lining, and it was foul and slippery with years of grease and dirt. But I got my fingers in his collar, tried hard to rip the breathing mask from his head. And I had to forfeit my hard-won advantage as he all but tore off my own respirator.

Out of the corner of my eye I could see Jane. She was frantically manipulating controls, replacing screens and withdrawing uranium slugs. It was impossible that she should hit the right combination, the only man who could do that lay unconscious at our feet. But she erred on the side of safety. The whine of the generators, of which we had not been conscious until its cessation, faded and died. There was momentary, confusing darkness as the power failed, and when the emergency batteries took over the lamps were sparse and dim.

But before this happened both Mullins and I were on the floor. He was an old man, and weak. He should have been weak, but his movements had what mine lacked, co-ordination with local gravitational conditions. And there may, too, have been that desperate, consuming surge of strength that comes to the insane. And he was sitting astride my body, and he had both hands at my throat, at the neckband of my mask. Both of mine were on his skinny wrists, but struggle as I might I knew that it was only a matter of seconds before the mask would be off. And the supreme irony of it all was hearing, faint and unmistakable, the penetrating whirr of Jane's little camera. It would make a good picture, I told myself. But none of us here would live to see it.

But Jane was still at the control panel . . .

How . . .?

When the lights went out Mullins whipped one of his hands away from my throat. And when they came on again that hand was holding a gun—an ugly, long-barrelled pistol of point five calibre. I saw the thin, gnarled finger tighten on the trigger. And then Jane was on him, both hands on his gun hand, wrenching and twisting. And the gun went off, its report thunderous at these close quarters. And the heavy slug from his own weapon took Mullins in the side. The fight was over.

We knelt by the body of the old man.

The thin plastic of his breathing mask was rising and falling ever so gently. Had it not been for this we should have thought him dead, it was impossible to detect any heart beat through the thick clothing. But he wasn't dead, which meant that he would be able to talk.

"Get the clothes off him !" ordered Jane.

Whilst I was busied with the unsavoury task—it must have been the first time in years that it had been done—Jane turned her back to me and

I heard the sound of something ripping. Whatever garment she was wearing under her skirt would be pressed into service for a bandage. She did not know until later that her camera, perched on the bench from which it had recorded the fight, had not failed to function on this occasion . . .

But I got Mullins' fur-lined jacket off, and two or three shirts which, when new, might have been any colour, and a layer of thick, woollen underclothing. There wasn't as much blood as I had anticipated. The bullet had caught him just below the ribs on the right side, and had gone right through without penetrating deeply.

"He'll live," said Jane. With deft fingers she began to bandage the wound, to staunch the flow of blood. "But it's a pity that we have no germicide handy. I just can't see how that mess can possibly fail to turn septic . . ."

The next thing was to return the Last of the Swagmen to consciousness. There was a valve on the oxygen cylinder in his haversack, a valve whereby the oxygen supply could be regulated. This we opened to its fullest extent, then sat back and awaited developments.

And while we sat and waited we marvelled that this dirty, unkempt creature should have held briefly in his hands the power of a god. For we now had time to work out what *would* have happened had the pile got out of control. The power station would, of course, have ceased to exist, but there was another, more modern station handling the bulk of the Martian energy demands. A few square miles of desert would have been fused and vapourised, but that would not have caused any serious inconvenience except to the few who happened to be in the immediate vicinity. But the door to the tunnel leading to Port Gregory had been left open—we found afterwards that Mullins had sabotaged the controls that would have slammed it shut seconds before the blast. And along the tunnel would have rushed a wave of searing gases, a projectile along the bore of a sixty-mile-long gun. The dome of the capital city would have burst like a soap bubble, and any who were lucky enough to survive the actual explosion would have died far more unpleasantly as the lethal radiations burned out eyes and lungs . . . It wasn't nice to think about it.

And this, *this*, had held the power of life and death over half a million fellow beings . . .

Mullins stirred and muttered—a tall, thin, dirty old man. His beard and sparse hair should have been white, but even they were so encrusted and stained as to be green more than any other colour. I looked more closely, interested in spite of myself. That green could hardly be the result of even years of neglect—it looked for all the world as though some tiny plant was growing on his scalp . . .

"It thinks I'm dead . . ." came a cracked voice from behind the swagman's breathing mask. "It's left me alone. But 'o are you ?"

"Never mind," replied Jane crisply. "*You* tell us what *you* were doing—and who told you to do it."

"A sheila . . . Yair . . . You're the one wot shot me, ain't yer ? But yer 'ad ter save yer boy friend . . . But yer ain't Johns, are yer ?"

"No. We're not police."

"Then I'll tell yer. It was way up north, past Paris de Ciel, past Tamaragrad even . . . Right up where the ice and snow march down to the edge

of the thirsty red desert . . . An' there's forests up there—forests of this here *Collinsia*. It ain't any good to the chemists the way it grows there—like trees it is, like trees with spiky leaves and big spikes growin' out o' the trunks. An' there's rabbit there—thousands on 'em, all colours. An' them bastards hide in the forest an' come out now an' again for an 'op over the desert. When they see me they all bolted back among the trees.

"But I waited an' watched, an' saw that there was paths runnin' into the woods. Paths big enough an' wide enough so that yer can just squeeze along 'em without them spikes rippin' yer ter shreds. An' I thought as I'd set my traps along them paths.

"But first of all I wanted to see where them paths led to—for all I knew there might be anything behind all them spikes an' spines. An' where *Collinsia* puts up that sort o' barricade you can bet yer boots that there's somethin' worth while behind it. But I must have gone miles an' miles an' miles—an' still nothin' but them damn' livin' bayonets. Just them an' now an' again a sort o' clearing where there was *Collinsia* of another sort—but the rabbits had had all that . . .

"It was in one o' them clearing's that I bedded down for the night. I 'adn't meant to let sunset catch me there—but wi' all them trees coverin' the sky it was 'ard to keep proper track o' time. I 'ad some rabbit meat in my tucker bag, an' I made a little fire an' boiled a billy o' tea. An' I got out my little airtight tent an' I was all set for a good night's kip. I could 'ear them rabbits thumpin' around under me—the ground must 'a' been like an 'oneycomb. And then, just as I was droppin' off, I 'eard the noise of somethin' crashin' around in the bush. It should 'a' made me careful—but I'd left the fire burnin' outside the tent an' that'd keep anything off.

"When the tent was ripped away in the night it was pitch dark—both the moons was too low for their light to get through the trees. An' there I was gaspin' an' chokin'—an' when that sort o' thing 'appens to yer the first thing yer reaches for isn't yer light or yer gun but yer mask . . . They let me put it on—an' then they grabbed me by the arms an' legs so I couldn't move. I couldn't see 'o *they* was—but I could 'ear that chitterin' sound they makes wi' them funny sideways mouths o' theirs, an' I could feel their claws grippin' me. Just tight enough to 'old me, you understand. If they'd been any tighter they'd 'a' 'ad my arms off.

"Then they got me to me feet an' started shovin' me down the path. An' when I was trippin' every second step they lifted me up an' carried me. Phobos was just beginnin' to show over the tops o' the trees, just so as I could get a good look at them ugly brutes wot 'ad me, when they dived down into a tunnel. 'Mullins,' says I to meself, 'this is where you makes a meal for Baby Crab an' all 'is little brothers an' sisters !'

"But it was a long tunnel—an' though we went down for Gawd knows 'ow far there was no sign of anything wantin' ter make a meal o' me. And though we'd lost sight o' the sky long since there was still light—a sort o' glow like wot yer gets from the 'ands of yer watch. An' I noticed that the air was pressin' me mask against me face—and that meant that it must be thick enough ter breathe. An' there was no sense of wastin' oxygen—but when I tried to reach up to take it off them damn' crabs just dug their claws in all the harder. And then damn me if one of 'em didn't do it 'imself—careful like so as not to tear the plastic—as we was passin' through part o' the

tunnel that was all overgrown wi' creepers an' such. I couldn't see 'em very well—but I could feel 'em brushin' my face an' all the time there was a sort o' rain o' fine dust all around me.

"An' then we come to where *It* was. Don't ask me about *It*, I just can't remember that part. But *It* told me what to do—an' one o' the crabs took most o' the gear out o' my tucker bag an' filled it up wi' things like kids' toy balloons. An' *It* told me that they was full of a gas or somethin', and that once they was bust anyone 'o wasn't wearin' a mask'd pass out.

"Then they, the crabs, took me back to the surface, bein' careful ter see that I 'ad me respirator back on. An' I remember that my 'ead was itchin' worse than usual, but I couldn't scratch it wi' me 'eadpiece in the way. An' there was somethin' inside my brain that kep' me goin' without food an' without sleep—although it let me drink from the canal as I 'eaded south. An' I wanted to tell the guards on the gate at Port Gregory wot I 'ad ter do, but *It* wouldn't let me. An' I thought that perhaps if I sung to meself, loud like, it might break the spell, but it didn't do no good. An' all the time that I was fightin' your man 'ere, Missus, I was a-tryin' to make meself lose. *It* made me pull the gun—I've never used it on anything but crabs . . ."

Then, in a pleading voice, "You won't turn me over to the Johns, will yer? They'll *make* me talk, they'll make me say wotever they want me to . . ."

There was a brief silence, broken only by the mechanical whirr of Jane's camera, still on its bench, still recording everything within range and field of its lenses and diaphragms.

"No . . ." began Jane.

Abruptly there was the sound of voices from the corridor outside, the clatter of booted feet running over the stone floor. Men were all around us, uniformed, armed. Jane and I raised our hands high before the menace of their levelled guns. Mullins—lying supine with a bloodstained bandage about his torso—they ignored.

"Shoot the rats now!" yelped somebody. "They'd have blown Port Gregory clear to Pluto if we hadn't got here in time!"

"It wasn't them," came a thin, cracked voice from the floor. "It was me, Mullins." The voice took on a note of pride. "The Last o' the Swagmen. They stopped me . . ."

"Mullins," said one of the troopers. "Who'd 'a' thought the old bastard had it in him? But pick him up, men. We'll take 'em all back for questioning."

"You'll never take *me* alive!" cried Mullins.

With surprising agility he sprang to his feet, pushed through the ring of men surrounding us. Shots were fired—but the light was bad and the Australian was weaving as he ran. Briefly he bent over a metal manhole cover in the stone floor, sent it in a clattering trajectory that swept the first of his pursuers off his feet. He stood briefly poised over the black hole—then he was gone. A long time afterwards we heard the splash . . .

There were technicians with the troopers and they were busying themselves getting things running once more. We heard one of them say: "D'ye remember when poor old Malcolm fell into the boiler feed? We got his bones next time we cleaned out—absolutely clean and white they were . . ."

Somewhere, something was starting up. Its rhythmic chatter seemed to match the metre of a song, an old song.

"Up jumped the swagman, sprang into the billabong,
'You'll never catch me alive!' said he;
And his ghost may be heard as you pass by that billabong—
'You'll come a-walzting Matilda with me!'"

I've often wondered since if the generator room of that power station *is* haunted now . . .

V

Explanations were in order when we got back to Port Gregory. Luckily for us those who had been on duty at the power station door were able to confirm, in part, our story as soon as they recovered from the effects of the anaesthetic gas. And there was Mullins' swag with some twisted and dried shreds of vegetable matter in it—shreds that might well have been all that remained of bladders that once had held something of a gaseous nature. And there were Jane's films—these gave a complete sound and visual record of the events of that night from EDDY'S BAR AND GRILL onwards. The last

part, that dealing with Mullins' story, Jane managed to remove and hide. If it had occurred to anybody that anything was being suppressed the missing portion would have had to be produced. But the shots, inadvertently recorded, of Jane tearing up her slip to make bandages were proof positive of her candour.

Nevertheless it was a sticky time we had. It was only our Terran citizenship, and the fact that we were both employees of powerful corporations, that saved us from a stickier. And the most galling part was to have Carmichael—Jane pointed him out to me, one of those little, dark, clever looking birds—sitting in on the interrogation. But he wouldn't use the story—it showed Interplanetary News Services and its gallant news hounds in far too good a light. He could use his influence with the censor to have it killed if Jane wanted to broadcast it from any of the Martian stations. But Jane didn't want to broadcast it until she had the full story. And Carmichael wanted that story too. Extra-Terran News could use it.

And then there was the Walrus bumbling around, very distressed about it all. "You shouldn't do these things," he kept on saying. "You shouldn't do these things . . ."

"Look, Mr. Consul," I said at last, "if we hadn't done these things, as you put it, there'd be none of us alive to talk about it."

"But the police, Mr. Basset-Wills. It's what they're paid for."

"Fat lot of chance a mere Terran has of getting a Martian cop interested in anything," put in Jane.

The Walrus made no verbal reply, but just glared.

I looked around our surroundings, felt, not for the first time, that I was getting rather tired of them. We were in a room in the Port Gregory Police Headquarters. It was plain, but comfortable enough—if one ignored the fact that the best easy chair was firmly occupied by Carmichael of the E.T.N. I met Carmichael's eyes then, annoyed by the look of tolerant amusement that was all too evident in them, shifted my regard to the old Consul. He had gone to the faucet in one corner beneath which was a container of paper cups. He took a cup from the container, held it beneath the tap and pressed the spring lever. Instead of the anticipated stream of ice water only a thin, muddy trickle emerged. He muttered something under his breath and threw the cup from him.

"Didn't you know, Mr. Consul," asked the E.T.N. man lazily, "the water's been off since 0700 this morning ?"

"Why ?" demanded Jane.

"Because, Meredith, we are at war. Whilst you and Mr. Basset Hyphen Wills were cavorting around the Old Power House every city on Mars went to Action Stations."

"Action Stations ?" I gasped. My dread, the feeling of sick fear that made my stomach drop a helluva long way into nothingness, must have been writ large on my face for any observer to read. We had had the beginnings of an atomic war once—and every sane person knew that such a conflict on a large scale must have only one finish.

"You needn't get alarmed, Wills. We're still on speaking terms with the Terran Central Government . . ."

"But who *are* you fighting ?" This was Jane, and even at the time I had

the idea that she was demanding confirmation rather than information. "Who *are* you fighting ?"

"Of course," put in the Walrus, "all Terran nationals must take shelter in the Consulate . . ."

Nobody paid any attention. Carmichael took out his cigarette case, selected a cigarette with so much care that one would have believed that its contents differed substantially in quality. One satisfying lungful of smoke he drew, then another. Then: "I don't know," he admitted. "Do you, Meredith ?"

"I don't know either," replied Jane. The verb was ever so subtly accented. "But what's all the gen ?"

"You were with us when we went out to get shots of the crabs headed towards Port Gregory along Casartelli's Canal. You saw the way that they seemed to be marching almost in military, disciplined formation. And you saw the way that they broke and scattered when our plane came low and its jets started to cook them. There was no intelligence there—it was just a mob of mindless animals bolting for cover—and most of 'em didn't even have the savvy to go for the cover that was nearest and most obvious, the canal itself.

"Nobody worried much about the things until the water went off this morning. Everybody knew what the cause of it was—just a dust storm that had passed a few miles north of the city and that had not been observed or reported. The usual crews went out in their usual *sandcats* with their usual tools. And they did not come back. And the water did not come on.

"The Department of Water Transport and Irrigation finally got tired of calling the gang boss on the radio telephone and decided to send a plane. It had a crew of two. One man, the pilot, came back.

"It appears that he came to the place where the canal was blocked. It was still blocked, by what looked like a sand dune. And the sluggishly flowing water from the north was just spreading out on each side of the obstruction, spreading out and soaking into the sand. Not far from the dry bed of the canal, just south of the obstruction, he saw the *sandcats* of the working gang. All three of them were standing there idle, and there was no sign of life in or around them. He came lower—and saw that the dune had a peculiarly mottled appearance. And he saw something white littered on the sand beside one of the *sandcats*.

"Well, he came down on his jets, landed, and the co-pilot put on his respirator and went out to see what was what. The pilot didn't like the look of things and decided that he'd better stay put and keep his jets warm ready for a quick getaway. The co-pilot went first of all to that litter of white rubbish beside the stranded *sandcats*. The pilot saw him bend down to examine it—then he straightened up in a hurry and started running back to the plane. And then the desert just vomited crabs—thousands of them there must have been. The co-pilot had his gun out and was letting fly right and left, but he had to stop to reload . . . And that was his lot. The pilot was shooting too—but there were so many of 'em that he made no impression. He kept the door open as long as he dared, hoping that his mate would make it, but when he saw nothing but a heap of crabs with shreds of cloth and pieces of red meat in their claws he knew it was useless . . .

He slammed the door in a hurry—there were a few hundred of the beasts heading his way from what was left of the co-pilot—and gave her the gun. And nearly went crashing over on to his side. Whilst he had been firing at the crabs attacking his mate others had come up on his blind side, had crawled over his wings and fuselage on that side. Luckily he was able to get his jets balanced—and after a few minutes in the air he had most of 'em shaken off. And then he came down again. He saw, now, what caused the mottled appearance of the dune choking the canal, it was the bodies of myriads of crabs. And when he saw all that was left of his co-pilot he saw what those scraps and splinters of white had been that he had seen by the stranded *sandcats* . . . He tried to come low over the desert and blast the beasts with his jets—but they burrowed down into the sand, deep down, before he could get anywhere near them."

"And so ?" asked Jane softly.

"And so the crabs have declared war on us. Reports have been coming in from all the cities. Canals have been choked, isolated hunters and trappers and prospectors have been ambushed and massacred. A caravan between Paris du Ciel and Nieu Arnhem has been attacked—the crabs stopped the *desert schooners* by sheer weight of numbers, jammed the caterpillar tracks with their bodies. The only way to get the passengers and crews out is by air, and that's not as easy as you might think. One plane landed a little way from the *sandcats*—and as soon as its doors were open the crabs were all over it and into it. The next one was smart, he tried to make a really close landing. And incinerated the *desert schooner* and everybody inside it. They're going to try flame throwers and asbestos suits next . . . Meanwhile, with bars of metal that they got from somewhere, the crabs have prised open one of the *sandcats* . . .

"You didn't see the caravan that left here this afternoon for Marsala, did you ? No, you wouldn't. But you should have done—it wasn't a caravan, it was a convoy. A dozen *desert schooners* armed with flame throwers—*and* an air escort."

"Why don't you use atom bombs ?" I asked.

"Use your head, man! We can't. The blasted things hide in the sand as soon as they see a rocket plane coming. The only time we see 'em is when they're besieging a stalled caravan—as between Paris du Ciel and Nieu Arnhem—or when there's a mob of 'em too close to a canal or to a city for safety. And we've got to make 'em, which takes times, especially with the water supply so uncertain. It's cut off now from the Old Power Station. But if this goes on we shall have to drop some—canals or no canals.

"But . . ." he turned to Jane, "what *do* you know about this, Meredith ?"

"I know nothing."

Again there was the faint accent on the word "know." Carmichael noticed it this time.

"Oh, I see. One of your famous hunches. And if you're allowed to follow it, what do you do ?"

"There is a Spurling Three at the spaceport—you probably know that I purchased it some few days ago. The local Aviators' Guild won't play—but I have my own pilot here. Mr. Basset-Wills is already on the I.N.S. payroll."

"I should have thought of that. But a Master Astronaut's Certificate

isn't as good as local knowledge. And you can have your pilot now—you can have the pick of the pilots in the Guild."

"Thank you. But I think I'll stick to Peter. He should be able to read a map. But I take it that you're speaking for the big white chiefs, Carmichael? What strings are tied to all this?"

"None," replied the E.T.N. man. "At least—not so you'd notice it. Any visual or sound recordings you make will, of course, have to go through the censor—but that's routine. Frankly we want to get to the bottom of this—fast. And you can ferret out the truth if anybody can."

"Thank you, kind sir. When can we go?"

"Any time you like. Your Spurling is stocked up with food and water. There are maps and instruments. There are two automatic rifles with ammunition, two flame throwers, and a couple of hand guns each . . ."

"And no strings?"

"No strings."

"Good. But we'll not start till daylight to-morrow morning. There are a few things to check first. To begin with—have you any of these crabs in captivity?"

"Yes. They found two still clinging on to the wings of the Department of Water Transport and Irrigation plane . . ."

"Take us to 'em."

"Really, Miss Meredith," bleated the Walrus plaintively, "in times like these all Earth nationals should . . ."

" . . . take refuge in the Consulate," finished Jane. "But whoever, or whatever, is behind all these doesn't give a damn if you're a Terran or an Alpha Centaurian. All we are is crab fodder. Or," she added under her breath, "fertiliser . . ."

Well, before we did anything else, we saw the first—and only—two prisoners of this strange campaign. We had to go outside the dome to see them, and, frankly, it hardly seemed worth the trouble of putting on outdoor clothing and respirators just to go and look at two such ugly specimens.

They have a half dozen or so in the London Interplanetary Zoo back on Earth—and once you've seen them you've seen all Martian land crabs. True, these, not having to labour against the pull of a heavier gravity, were a little more spry. But they were no more handsome.

I don't know whether you've seen the beasts. They aren't very prepossessing. The body is about twelve inches in diameter by nine in thickness, and is balanced on top of a bunch of spidery stilts fully five feet in length. The limbs on which the claws are mounted are elongated far beyond the proportions of those of their Terran ancestors. And the eyes are on long, telescopic stalks so that when the creature is submerged in the sea of sand it can use them as periscopes. And there are two antennae which can, in the Martian variety, be used as a sort of lasso.

These two were in a cage of stout wire towards the edge of the landing field. Now and again they would seize the thick strands with their massive claws, shake and strain with uncoordinated fury. There was no concerted action, no evidence of intelligent co-operation. And we felt that the two prisoners were dimly aware of us only as food, and as enemies larger than themselves.

"I thought so," said Jane softly. "I thought so . . ."

What with the thin air and our masks I barely heard her. Carmichael, who was standing further from her than I was, did not. He was not intended to. I bent towards Jane until the transparent plastic fronts of our helmets were touching and demanded what it was she thought.

"The vegetable gardens on the crabs' backs, you fool. Don't you see the connection between them and poor old Mossy Whiskers?"

"Mossy Whiskers? Oh, Mullins, of course. Frankly, no."

"It's obvious. It . . ."

Just then a shift of the thin wind brought a great cloud of black, oily smoke from the trench that had been hastily dug around the city billowing over us. Masked as we were it made no difference whatsoever to our breathing—but it seemed that it should. Involuntarily I held my breath. And after I had brought up my sleeve to wipe my facepiece clear I saw that Jane was headed in the direction of the trench full of burning oil, the flame throwers, and the asbestos-suited figures like demons from some medieval hell.

I followed, but there was nothing much to see. Just a trench full of lurid, fuliginous fire, just the flame throwers on its nearer edge standing to the alert like the artillery of a beleagured city. They *were* the artillery of a beleagured city—and upon them devolved the task of keeping the gates and the landing field clear of the investing hosts.

We watched for a while. The scene had its fascination, but there was no action to compel the interest. Action there had been—the piles of crustacean corpses with burst carapaces and cindery legs attested to that. But nothing was happening now. So Jane went back into Port Gregory to pack whatever gear she would require for the morrow's trip, and I got Carmichael to show me our Spurling Three. And by the time that I had assured myself that all was in order the last of the daylight was gone, and the cold stars were looking down on the ruddy fires, Man's age-old defence against a hostile Nature.

VI

She was a nice little job, that Spurling Three. I had flown similar turret drive ships on Ganymede—flying transport is essentially the same on all the worlds with thin or non-existent atmosphere. And Carmichael—or the people he was representing—had certainly done us proud in the matter of equipment. Charts for the whole of Mars, corrected almost to the latest second, and a chronometer and a bubble sextant for use in the event—far from impossible these days—of a failure of the Martian navigation stations.

She was commodious, too. We could live in her pressure cabin for days at a stretch, if need be, without suffering more than minor discomforts. And who ever had looked after the commissariat must have had a siege of at least a month's duration in mind.

The sun was just lifting over the desert rim when we blasted off that morning. The smoke from the flame defences hung low and oily, and through the dark, artificial clouds the sun struggled with a dim ruddiness foreign to Mars with its clear, thin atmosphere. But it was a matter of seconds only before our roaring jets lifted us above the smoke-screen. Port Gregory looked like an island, like a strangely symmetrical rock lifting its

ivory pinnacles above a black, swirling sea.

For a while I busied myself with the turret drive, trying to strike the correct combination of jet angle and power feed that would give me the desired forward momentum without loss or gain of altitude. I could have left it all to the automatic pilot, but one thing we are taught in the Service is never to place too implicit a faith in the machine. Man, with all his shortcomings, is a robust robot who can take over when conditions have caused a breakdown of the often more fragile, invariably more specialised, mechanisms.

"Set the course zero, zero, zero," ordered Jane. "Speed six hundred knots."

"Terran or Martian ?"

"What does it matter ? Anyhow—you'd better navigate this beast. I'll tell you what I want. Follow the canal to Paris du Ciel, then circle the city at low speed. I want some shots. While we're about it we may as well have a look at Marsala. And Nieu Arnhem. And Tamaragrad. And Collisburg . . ."

"And what time do you reckon on getting to the sinister forest just south of the North Pole ?"

"It's not important. Just about dark will do. We'll set the jets to hover, get in a good night's sleep, then we'll have a full day to explore."

"O.K. You're the Captain."

So all that day was spent sweeping along the canals, observing the damage wrought by the crustacean armies. We could see that progress had been made in clearing the worst blockages, and we could see that the work of blocking was still going on. Hordes of crabs we glimpsed, hordes that melted speedily into the desert sand at our approach. Looking astern we saw them break surface, mottling the rusty expanse with a darker brown, looking for all the world like some fantastically swift-growing form of plant life springing up in our wake.

Other planes were in the air, planes bearing the insignia of the Martian Government. Most of them ignored us, but now and again some officious patrol commander would demand our identity and destination. But they let us go on our lawful occasions without hindrance. It was all too easy, and notwithstanding the assurance that we had been given that there were no strings attached to our freedom to observe, to investigate, we felt more than a little suspicious.

In any case our observations of the Martian cities between Port Gregory and the northern polar cap taught us nothing new. The domes themselves differed only in minor details from each other—Paris du Ciel could be distinguished by the graceful latticework towers surmounting it, and Tamaragrad by the huge statue of Tamara Rynin, commander of the first Soviet expedition and first woman on Mars—but the scene around each was a repetition of that around Port Gregory. There was the same moat dug deep into the sand, filled with burning oil, the same batteries of improvised flame throwers. We saw only one thing fresh, a convoy of the *desert schooners* fighting its way into Nieu Arnhem. And when the dozen big tractors had forced their way through the myriad armoured bodies of the crabs one of their number was left, stalled, its caterpillar tracks clogged by the crushed bodies of the enemy.

Its flame throwers spurted viciously but briefly—they must have been in use almost continuously on the run from whatever city the convoy had come. And then the crabs were all around it and all over it. One of the patrolling aircraft swooped low over the scene, from it trailing a fine, misty spray. And when it had passed the crabs were motionless, and masked figures emerged from the body of the tractor, worked frantically to clear the tracks before fresh hordes should be upon them.

There was nothing we could do to help and, in any case, the situation appeared to be well under control. And having obtained our shots we pushed on. And the sun was foundering fast below the desert's western rim when the low glare in the sky ahead told of the presence of the polar icefield. And a dark mass below the glare was the forest of which Mullins had talked.

Dark and forbidding, black against the pale glare to the northward, stretched the forest. Its edge was a seemingly unbroken wall set against the southern sands, a living wall, a wall whose face was set with spikes and spines, with yard long bayonets presented against any possible invader.

To the east the forest was bounded by Casartelli's Canal. We followed the waterway north, to the edge of the ice and snow, to the white, dead plains that were harshly scintillant in the aching beams of our searchlights.

For the sun had now set and only Deimos, low in the sky, cast its shifting radiance over the scene. But in the powerful light of the lamps no break could we find in the wall of greenery. West we flew, along the forest's northern edge, then south down Duval's Canal, the western boundary. Over the forest we flew—and there was no sign of even a small clearing.

Our original scheme had been to hover for the night just south of the wood. No better plan presented itself, and so it was that I set the controls to maintain a comfortable five hundred foot altitude. I didn't feel too happy about it. In Space, if your drive should fail, you have plenty of time to do something about it. But here, over a planetary surface, it all seemed very risky. But it was less risky than to make a landing and have whatever monsters were harboured by the forest swarming over the Spurling whilst we slept.

For a while we sat in the pilots' chairs and smoked and talked. Both moons came up, hurtled eerily across the black sky. The dark mass below and to the north seemed to shift and stir. We knew that it was only a trick of the light, but it seemed that it was the enchanted wood of all the less pleasant fairy stories of our childhood.

And then it seemed that a portion of the shadowy bulk put out pseudopods, stretched hungry arms out over the desert. Jane reached for her camera, fast, and I just sat and stared. It wasn't possible, but . . . There was a sort of evil magic in the night that made anything possible.

Anticlimactically the arms of darkness broke off from the parent body, split each into a hundred black blobs. Over the sand they raced with a peculiarly jerky motion, coalesced and then exploded into a thousand leaping fragments. The rabbits were making high festival under the light of the moons, were sporting with a careless abandon unknown to higher life forms weighed down with the cares and troubles brought by intelligence the responsibilities of civilisation.

From the shadowy wood marched other shadows, compactly grouped, military. Moving with fast precision they wheeled over the moonlit sands, encircled the gambolling rabbits with a thin cordon. This drew in towards the edge of the woods, for all the world as though it were a loop of rope, a noose, being drawn tight by somebody within the shadows. Somebody—or something.

"So the party's over," said Jane at last. "The bunnies have had their fun and frolic, their evening's exercise. The sheep-dogs have rounded up the sheep for the night. And I think it's time for bed . . ."

So she bedded down on the settee in the little living cabin and I made a passable enough couch with the two pilots' chairs, and the next we knew the time alarm was shrilling and the sun was just topping the eastern horizon.

There were no signs of life when we grounded gently on the fine sand. We put on our fur-lined coveralls over our indoor clothing, and asbestos woven fabric suits on top of everything. We buckled on the belts with the heavy pistols in their holsters with their ammunition pouches for both the hand guns and the automatic rifles. We assisted each other with the harnesses to which were affixed the canisters of the portable flame throwers. We put on our respirators. And then found that we couldn't get out of the cabin door. It was the flame throwers that were the trouble. So we had to take them off and put them on again when we got outside.

The next job was bedding the grapnel. It did not seem possible that any anchoring device could find a grip in the dry, pulverised sand of Mars. But whoever had designed these grapnels had done a masterly job. Their many spidery arms, their spatulate extensions, would catch and hold. Whether or not they could have held against a wind with the weight of Earth's atmosphere behind it is a moot point—but on Earth you'd have something a little more solid in which to anchor.

About six feet above the grapnel, attached to the mooring cable, was a remote control device. On its button being depressed the drive would start, the ship would rise vertically and hover at a predetermined altitude, well clear of any inquisitive or hostile animals or humans. It was necessary, on actuating the remote control mechanism, to step well back to avoid being caught by the back blast of the jets. And then the tiny control panel could be unshipped with a simple anti-clockwise half-turn. It was like a key, inasmuch as only this panel would fit into this particular socket.

It was all very ingenious and all very foolproof—provided that one did not want to get away in a tearing hurry. I, for one, hoped that this would not be the case.

Walking along the edge of the forest we looked in vain for an opening. It would have been suicidal to attempt to force a way in—this we soon found from our first, tentative experiments. The needle-thin ends of the vegetable bayonets penetrated with ease the thicknesses of asbestos weave and fur-lined drill, inflicted a painful prick on the inquisitive finger. The cutting edge of the defences was tried upon the tough plastic leather of a pistol holster—and the ease with which it sheared through the stout synthetic made it plain that it would be far healthier to go for a swim in a sea of broken bottles.

It was perhaps half an hour after we had commenced our exploration that we found the pathway into the wood. We would have passed it without seeing it, as, in all probability, we had passed many similar openings, had it not been for the white rabbit. The animal was standing there quite quietly, the snowy fur in startling contradistinction to the dark foliage. It let us approach to within a few feet of it before it turned and loped into the shadows.

It was the first time that I had seen one of the rabbits at close quarters. I was familiar enough with their terrestrial ancestors, and it came as a shock to see for myself what changes had been wrought in the homely stock by an alien environment. Fully five feet high the animal stood. Had it not been for the absence of tail it would have passed for a kangaroo of sorts. The chest was developed to a size capable of housing the big lungs demanded by the thin atmosphere, making the creature, in spite of its powerful hind legs, look absurdly top heavy. And it stood—or, rather, squatted—and regarded us with faintly curious pink eyes. The split upper lip worked over the big, projecting incisors. We knew that rabbits, even on Mars weren't carnivorous, but those over-large teeth looked to be capable of inflicting considerable damage at close quarters. So did the claws with which both fore and hind feet were armed.

And we stood and looked at the white rabbit, and the white rabbit stood and looked at us, and it wasn't until we brought our automatic rifles to the

ready that the albino decided that it didn't care for our company. And so it turned, dropped to all-fours, and vanished into the wood. It was all too Alice-in-Wonderlandish . . . And so, with a sense of unreality strongly upon us, we followed. Or tried to follow.

It was the flame throwers that got in the way. They were bulky, too bulky. It didn't matter if we tried a frontal approach or tried to sidle in through the opening sideways—they caught and held. And when our protective clothing was shredded by a score of deep slashes, each one barely missing the skin beneath, we decided that we would have to abandon what was, probably, our most effective weapon. It never occurred to us to use these same projectors to clear a path through the undergrowth. It wouldn't have mattered much if we had, it is probable that had we done so their charges would have been exhausted long before we wished to use them for anything else but road clearance.

Her voice muffled by her headpiece, thin in the thin air, Jane was saying something. I strained my ears to catch it.

"Beware the Jabberwock, my son,
The jaws that bite, the claws that catch,
Beware the Jub-jub tree and shun
The frumious bandersnatch . . ."

It was all very apposite—and in this forest of spiny growths that reached their bayonet leaves a hundred or more feet into the thin air it was not very cheering. The light—or lack of it—was all wrong for one to be able to appreciate Lewis Carroll's nonsense lines as they were meant to be appreciated. In this green gloom the Jub-jub tree, with its sharp swords and spears lining the narrow, winding path along which we trod, was indeed a thing of which to beware. It had ceased to be *Collinsia Utilensis*, a mere plant existing for the use and convenience of the master race of the Universe. It was something older, stronger, something guarding its secrets with a quietly vicious determination. And all the time I was quietly kicking myself for letting a few lines of absurd doggerel send my mind wandering along such nonsensical tracks.

We saw no more of our friend the white rabbit. Once of twice we thought we glimpsed movement along the trail, figures that vanished behind the next corner just before we could see them properly. It may have been imagination, it may not. But so far we had encountered nothing but the purely passive hostility of the spiky plants.

And then we came to the clearing. It was roughly circular, about twenty feet in diameter. The ground was covered with a short, mossy growth, springy under the feet. Only another manifestation of the versatile *Collinsia* it may have been, but it was hard to appreciate the fact that it was all part of the same plant whose towering upthrusting shut out the very sky. In any case we had more important things than botany on our minds. For there were the remains of a plastic tent strewn over the ground. Something had tried to eat the inedible synthetic, something else had shredded it with sharp claws. But it was obviously a portable shelter of the type used by the trappers and prospectors, such as had been used by the Last of the Swagmen. And the smoke-blackened cylinder of thin aluminium was proof positive that this was where Mullins had made his last camp. Not that I realised

what it was at first, I didn't realise until I heard Jane softly singing:

"And he sang as he watched and waited while his billy boiled,
You'll come a-waltzing Matilda with me!"

But the evocation of the ghost of the dead Mullins would not get us anywhere. And I fought to throw off the mood of doubt, of indecision, that had somehow descended upon us. I tried not to hear the furtive rustlings that came from all around us, where something stirred in the thick undergrowth. I think that these pitiful relics of the Last of the Swagmen had brought it home to us that we were fools rushing in where any angel would fear to tread, that the only advantage we had over the Australian was that we were forewarned. But we were no better armed.

And Jane, of course, would regard this, of all moments, as a suitable time for further quotations from Carroll.

"And as in uffish thought he stood
The Jabberwock, with eyes of flame,
Came whiffling through the tulgey wood
And burbled as it came . . ."

But it would be incorrect to describe the sound as "whiffling." That word conveys an impression of speed. This was more of the noise made by armoured bodies forcing themselves, not too rapidly, through a natural barbed wire entanglement. And there were plenty of them. And they didn't burble. The sound that came from their multitudinous mouths was more of a dry rustling, the grating of horny surface on horny surface as the disgustingly complex machinery of crustacean jaws worked avidly and unceasingly.

Had we stayed in the clearing we could have held them off indefinitely—given an inexhaustible supply of ammunition. It was simple—as soon as an armoured carapace pushed through the undergrowth a heavy slug from a pistol or a high velocity bullet from a rifle would smash it. At that range we couldn't miss. The slaughter was great, but it was getting us precisely nowhere. Our only hope of escape lay in fighting our way back to the desert and the Spurling Three.

Speaking hastily, in broken sentences between bursts from our guns, we arranged a plan of campaign. I was to go first, clearing a way ahead, and Jane was to follow, her back to my back, fighting off pursuit. And for the first few yards it worked. It seemed, even, that our enemies were discouraged by the accuracy of our fire. We allowed ourselves to feel hopeful. But we had forgotten one thing—the fact that they could climb. And when a shower of heavy bodies—all legs and pincers and flinty armour—dropped on us from above we knew that the fight was over. We went on fighting—but we knew that the fight was over.

VII

And we didn't go on fighting for long, either. Our rifles were snatched from us. We managed to get off a round or two from our pistols, and then they were gone. And there was a brief period of the frenzied snapping off of spidery limbs with our hands—a nightmarish business that, even now, gives me the cold shudders when I think about it.

They got me down first. There were pincers at my arms and my legs,

painfully gripping. There was the weight of a dozen, or more, armoured bodies on my chest. And there were the sharp-clawed, spiny feet scrambling over my clothing and over my helmet until I feared that the tough, transparent plastic would tear, that I would asphyxiate helplessly in the too thin air of Mars. And looking back on it all I am rather amused that I should have been so concerned about the manner of my going when I was as good as gone. It may have been that Mullins' story, if it were true, promised us at least a few more hours of life. And in those few hours anything could happen.

Out of the corner of my eye I saw Jane go down, and I saw her picked up and carried, still in a supine position, along the narrow path. I felt the pincers on my wrists and arms, ankles and legs, tighten their grip. Then the crabs lifted me from the ground and I saw the tracery of dark spikes and fronds, the tiny infrequent patches of distant sky, began to move. The pain of serrated claws pressing deep had dulled to numbness when the limited, overhead view changed abruptly to the brown earth roof of a tunnel. And then for a little it was dark, and then there was a wan, greenish phosphorescence.

It was warm down here. Our heavy clothing had been ideal for the near-freezing midday temperature of the surface, but now, even though no muscular effort was being made, it was uncomfortably hot. The desire to scratch, to wipe away the little rivulet of perspiration running down my face, was almost more than I could stand. More than anything else in the world I wanted to tear off my mask, to put an end to the intolerable irritation, but those steel-hard pincers would not permit the slightest movement of a limb.

The air was getting thicker. The outside pressure was approximating that inside our respirators. They no longer stood out from our faces like inflated balloons, they sagged down and rested clammily on our features like an extra skin. They added considerably to our discomfort. And we were helpless to do anything about it.

We came, at last, to a place of growing things, a cavern where a thin path or tunnel wound tortuously through a tentacular mass of luminescent foliage. It was here that the crabs stopped, that their appendages, with amazing dexterity, loosed the fastenings of our masks. The masks were lifted from our heads, and it was then that I heard Jane.

"Peter," she was calling. "*Peter* ! Are you all right ?"

"Yes. And you ?"

"I'm doin' fine . . . As fine as can be expected, anyhow. I can still breathe—and at last I can talk . . . Damn !"

"What's wrong ?"

"A mouthful of some floury stuff. It's coming from these blasted vines. And my hair is full of it . . ."

"So is mine. *And* it's itching . . ."

"Then this is it," she said. "Remember poor old Mullins and his mossy hair and whiskers . . .? Remember the crabs, and the lichenous growth on their shells . . .?"

Things began to add up and make sense.

"But," I objected, "the rabbits . . . Why can't it do the same to them ?"

"I don't know. Maybe their instincts of cleanliness are too strong for it,

maybe they go and roll in the sand before this parasitical weed has a chance to catch hold. Perhaps Mullins could have done likewise had his instincts of personal hygiene been as strong as those of the rabbits . . . And *It* may be strong enough to make me blow up a power station—but *It*'ll have to be stronger still to stop me from washing my hair !"

By this time we were out of the cave of vines, were being carried deeper and still deeper below the surface of Mars. The tunnel was dark again, but a dim, steady radiance was coming from ahead. There was light there, and, as we were carried closer to its source, a smell. It was a smell compounded of carrion and of growing things, a smell of life and of death. Of life—but no normal, healthy life could smell like this.

The stench was almost overpowering when, at last, we were borne into the last cavern of all. It came from a pile of animal carcases that were stacked around what, at first sight, appeared to be a huge snake. But its black coils were completely motionless, and there was neither head nor tail. Without taper, without any dimunition of thickness whatsoever, the lower end vanished into the soil of the cavern floor. And the upper portion divided itself into scores of tentacles some of which, scarcely less in diameter than the parent body, seemed to have penetrated the earthen roof and walls of the cave. Others, varying in thickness from a thin whiplash to a half-inch wand, drooped listlessly, not unlike the dejected branches of a Terran weeping willow.

But it was alive—of that there was no doubt. And it was powerful. Almost visible waves of force beat out around it. And little tendrils of thought crept from it, insinuated themselves, questing, into our minds. Insinuated themselves—and recoiled. There was surprise there—and disappointment. Surprise that here were two specimens of *homo sapiens* far less easy to control than the last specimen, until now the only living one, had been. And disappointment—for the same reason.

"And so it didn't catch," Jane was saying softly. "It didn't catch. I see now—those seeds or spores or whatever they were that were dusted on us in that cave full of vines are yet another manifestation of *Collinsia Utilensis*. A very specialised one. They are *en rapport*, telepathically, with the parent . . . root here. Through them this . . . intelligence controls the organisms on which it has planted its agents. Through them it sees through their eyes. It was easy enough to start them on the crabs—their shells are far from clean. There is dried, crusted blood there, all manner of filth, the relics of meals ever since the monsters first burst from the egg. With rabbits it wouldn't be so easy—they are clean from the word go and keep themselves so. The same applies to us—I hope. But on poor old Mullins' scalp the spores found fertile soil. And I hope it can't understand what I'm saying . . ."

I hoped so, too. It just struck me that, whilst it had Mullins under its control, it could have learned English. And the prospects of being rolled in that pile of carrion, of decomposing rabbit carcases that provided sustenance for the plant intelligence, was not one upon which to dwell with any degree of enthusiasm.

I hoped that it had no organs of hearing.

And when the crabs, still gripping me hard and painfully, carried me to the huge root I feared that the worst was about to happen. But they halted

when still a few feet from the stinking pile, halted and froze into immobility.

The tendrils pendant from the top of the root stirred sluggishly. They writhed into slow, painful movement. I heard Jane, behind me, gasp with horror. She told me afterwards that she feared that this was to prove the vampire plant so beloved of fantasy authors, that I was to be drained of blood to make a meal for the vegetable monster.

From the bunch of tentacles two separated themselves. They were unlike the others inasmuch as each bore, on its end, what looked like a flat sucking disc. Their appearance was very far from reassuring. Down they came with slow deliberation, and then the first one made contact with my left temple. There was a mild tingling shock. A second later the other one attached itself to my right temple.

It is hard to describe what happened after. It is best to say, perhaps, that without volition I found myself remembering *everything*. From my very earliest days right to the present moment the stream of memory flowed through my brain, flowed, I am sure, into whatever alien mind was possessed by our captor. There were things I had forgotten, things that I had often tried to forget. There was all my knowledge, all my experience, all that I was.

And that wasn't the whole of it. Try to imagine a sort of psychological osmosis. It's not the correct term, I know, but that's how it worked out. It wasn't a one-way traffic. I don't think for one moment that *Collinsia* intended things to pan out that way—it just happened. And, as far as my end was concerned it was like watching two cinema screens at once. One film I had seen before—but the other film had never been seen before by Man. It was the story of a world, small, barren—a world to which intelligent life had come relatively late.

It was the story of one intelligence which had grown near the north pole of the planet, which was anchored, as much by the shortage of water elsewhere as by its own immobility, to the moistness just south of the polar icecap. And there preyed upon the stems and leaves and fruit which were the laboratories, the observatories, of the intelligence a little, hardy animal not unlike the Earthly armadillo. And the intelligence developed spiny protections for its above-the-surface growths, for the unintelligent projections of itself that observed and recorded. And the armadillo-beast ranged over the surface of the red planet until, at last, there was no more plant life to be found, until it died vainly in its thousands on the specialised, deadly barriers protecting the intelligence from depredation.

But the intelligence was curious. Its tendrils explored the bodies of the dead armadillos, paid special attention to the brain. And it developed yet another form of itself—a tiny, almost fungoid growth that would flourish on any not too clean surface of living integument. It was, in ways that were incomprehensible to me, a sort of tiny telepathic receiving and transmitting set. In various places the spiny barrier was let down. The armadillos found the gaps, penetrated the undergrowth and feasted. And, as the microscopic spores fell on to their carapaces, fell and rooted and flourished, became the slaves of the intelligence.

It was then that the canals were cut. Driving south, driven by the cold brain outside their bodies, the armadillo-beasts excavated their way clear

to the south pole. And along the canals fresh colonies of the intelligence sprang up, colonies whose seeds were carried in the alimentary canals of the little animals, colonies whose seeds had been embedded within the tempting fruits developed by the intelligence. And with secretions from their own bodies the canal builders cemented the beds of the canals—and built strongly, surely, almost permanently. And the whole of Mars was now one vast laboratory for the intelligence as the roots of the new colonies linked up with those of the parent plant at the northern pole.

It was intended, then, that most of the armadillos should die, that only a small colony should survive as a reservoir of mobile slaves for the intelligence. The unwanted beasts, their work done, were driven by the brain outside their brains to fall upon each other with tooth and claw, to leave their rotting bodies where they would best serve as fertiliser. The small number of favoured animals did not survive for long. Out of the wreckage of the slaughter came a tiny enemy, a micro-organism, a disease that ran through the depleted ranks of the armadillos like a consuming fire. Given time, the intelligence could have coped with the situation. It did find a cure for the disease, but it was too late. Only males were left, and barely a score of those. And they, while they lived, spread the plant colonies to the last few corners of the planet as yet unsettled. And died.

Years passed, years during which the canals silted up, years which saw the gradual slackening of the grip with which the intelligence had once firmly held its world. It tried to develop mobile forms of itself, achieved a certain limited success with feathery bundles that drifted before the thin winds. But true mobility, a mobility that could work, that could delve and build, somehow always just eluded it. There is no dobt that, given time, the problem would have been solved. But before it was even well begun Man, on his wings of flame and thunder, came down from the stars.

VIII

Man was always a mystery to the intelligence. It had no opportunities for a thorough examination, no chance for anything more than superficial observation. At first it seemed that a mutually profitable relationship, a sort of symbiosis, might be possible. Man cleared the canals, set in motion again the sluggish flow north and south from the melting icecaps. Of this the intelligence was coldly appreciative. But it soon became obvious that Man regarded himself as the master, saw the colonies of the intelligence as no more than a humble life form set on Mars for his use and convenience. To him the thorny barriers protecting the plant laboratories and observatories were no barrier.

And Man brought with him humbler life forms. One of these, furry, stupid, might make an ideal slave for the intelligence. But for one thing. The seeds of the telepathic organisms would not flourish in its clean pelt. But it didn't matter. The other creature, carnivorous, heavily armed and armoured, could be enslaved. With it other, less well equipped life forms could be controlled. Or exterminated.

There was more, much more. But the point of view was so hopelessly alien, more alien than that of any animal could have been, that it was impossible to do more than vaguely sense its meaning.

And during the latter stages of this strange inquisition, this forced exchange of thoughts and memories, the crabs released my arms and legs. I was free

to move—but it was an illusory freedom. As long as those tendrils with their discs were in contact I was able to move only as the intelligence directed. One by one, reluctantly, I emptied my pockets. Item by item I handed their contents up into the nest of writhing tentacles. And as each article was examined I found myself visualising its use, its application.

Then it was all over. The big pincers clamped down again on arms and legs, the discs were withdrawn from my forehead. I managed to turn my head as I passed Jane. She was looking white and sick. "Cheer up," I managed to say. "It's not too bad. And you learn as much about it as it learns about you . . . When we get out of here you'll have the scoop of all time . . ."

"*When* we get out," she repeated.

During my own inquisition I had found time to wonder briefly, vaguely, why Jane had kept so silent. Now I found out. I tried to say something reassuring, something showing a hope, a confidence, that I was far from feeling. And I never got past the first syllable. One of those infernal crabs clapped its pincer down on my mouth—and in its pincer it was holding a pad of some spongy vegetable matter. And one taste of it decided me that a dignified silence was the best policy.

But I could watch. And I was amazed. It seemed to me that the whole process had taken hours—but it could not have been more than minutes at the most. Then came the handing over and examination of the contents of pockets and pouches. I felt a conviction that it would break Jane's heart to have to lose her camera, the little machine that already held within its body records that would be invaluable should we ever get back to civilisation. But cigarette case, cosmetics container and handkerchiefs had all been dealt with, now it was the turn of the photographic and sound recording equipment and accessories. I didn't see what the first item was. I knew it was something important from the strained expression of Jane's face. I did not know until afterwards the intensity of the effort with which she had snapped the psychic bonds that held her—snapped them for just long enough to move the index finger of her right hand the fraction of an inch.

With shocking suddenness the little object burst into incandescence. I know now that its light was not of such an intensity to be actually dangerous, but our eyes by this time were well accustomed to the dimly glowing dusk of the caves. I saw the tendrils of the great root writhe and recoil from the source of the searing radiance—and even though I now had no physical contact with the intelligence its wordless screaming beat strongly inside my brain. And for Jane it was worse. The two sucker pads were still touching her forehead—she would be receiving all the thing's frightened agony.

The pincers of the crabs gripping my legs and arms relaxed, opened. I fell heavily to the ground. The crabs stood motionless in stiff, ungainly attitudes—ugly clockwork toys that somebody had forgotten to wind. Not sparing them a second glance I scrambled hastily to my feet. With eyes half closed against the light I lurched forward. Jane was sprawled where she had been dropped. As each wave of pain, of fear, from the plant intelligence struck her she twitched. And her face was a deathly white in the glare of her daylight lamp. Her eyes were shut.

It was only a second's work to snatch the two tendrils away from her

head. They came easily, hung limp and lifeless once they were clear. I wanted to hold her, to protect her. This I did—but not for long. She stirred, the eyes flickered open. And her first words were: "Where's my camera?"

So the moment passed. And I found myself holding the flaring light while she took shots of the huge root with its writhing tendrils and tentacles, of the crabs frozen in their attitudes of menancing ugliness.

"It's a pity that we couldn't get the rest," she murmured. "But this will have to do . . ."

Our respirators we found in our pouches—it was obvious that the thing in the cave had intended us to return to the surface, had intended to use us as it had Mullins. But Mullins had returned to the surface with the aid of all the queer denizens of this odd corner of Mars. We would have no such aid—and our weapons were gone.

All but one—and that the most powerful of all. Light that was, to this dweller in the darkness, a searing flame. Light that would immobilise, as long as it lasted, the power station from which all the living automata of Mars drew their energy. Light that had, by Jane's reckoning, but a scant fifteen minutes more to live.

So we left it there. We had a pocket flash, feeble by comparison, that would light us to the surface. And we hurried through the tunnels, pausing only to ship our respirators when we came to the cave of the vines.

And on our way we passed many of the giant crabs. They were not dead—and they were not as motionless as those in the cavern of the intelligence had been. Their claws twitched hungrily as we hurried past, the spidery legs trembled. The light was dying.

The tunnel seemed unconscionably long. It was not until we blundered into the spines and spikes of *Collensia* in its tree-like form that we realised that night had fallen on the upper world during our captivity. And neither Phobos nor Deimos was anywhere near the zenith—all that filtered through the dense canopy would be the light of such rare stars as were almost directly overhead.

And around us the forest was stirring, was awakening from the sleep into which we had plunged it. And from the tunnel up which we had run came rustling and scraping noises. And overhead something droned, shone briefly incandescent through the lattice of spiny fronds.

"I hate to do it," Jane was almost sobbing, "but it's our only chance!"

She directed the beam of her pocket flash upwards. It stabbed the darkness in broken rhythm—three dots, three dashes, three dots. The droning roar was growing louder, and as the flare of jets struck down through the trees Jane sent her SOS again.

Whoever was up there would have to be fast. The darkness around us was alive with crepitating menace. I do not know to this day why the thing in the cave was so slow in throwing all its forces against us. Weaponless, we stood no chance of surviving. It may be that, although the light had died, it had still to collect all its scattered faculties. And it may well be that what seemed to us to be long minutes was, in reality, only short seconds.

The ship in the sky was coming down. This was painfully slow—she had literally to burn her way down. And she had to descend in a sort of tight spiral, otherwise a patch would have been cleared only directly under

the jets and nose and tail assembly would have caught and held in the trees. And at the finish we had to retreat into the tunnel to escape being incinerated by the down-stabbing lances of fire.

Jane shone her torch down the tunnel. Its beam fell on a nightmare jumble of jointed pincers and spidery legs and waving antennae. The crabs were coming up slowly, hesitantly. But they were coming up. They were coming up faster than the ship was coming down. There was something hard and round at my feet—I remembered having stumbled over this same object on my way out. I bent and picked it up. It was a stone, old and rounded. It was a good two feet in diameter.

And when I threw it I heard the sound of splintering shells, of spattering body fluids. It was intensely satisfying. But there were no more stones.

We felt the unmistakable tremor as the ship grounded, and the tunnel mouth flared with multi-coloured fire in the second before the drive was cut. And as we stumbled out into the open a door in the fuselage gaped suddenly. In it, silhouetted against the light, was a black figure, urgently waving. But we needed no pressing invitation to enter the ship. And even the fact that the waving figure was Carmichael of E.T.N. did little to take the edge off our relief. Frankly, it did nothing to take the edge off mine.

Carmichael was very decent about it all—the discovery of the plant intelligence was an I.N.S. scoop and broadcast as such. The rescue of Jane Meredith was an E.T.N. scoop—and neither I.N.S. nor Jane herself was inclined to deny the rival firm full credit for what they had done. The unfortunate part of it all was that Jane's script and films had to go through the censorship. And the editing—for that was what it was—was beautifully done. It seemed, at first glance, that almost nothing had been deleted. Almost nothing was. Such few changes as had been made made the story one of a gallant people fighting a desperate battle against a sinister, alien intelligence. And somehow the real, unflattering issue was obscured, lost. We can tell the story now—but it has lost its news value. The scoop has been made and has gone down in newscasting history and in the memories of the public. And the Martians have gained considerable interplanetary prestige in consequence.

They were grateful to us, these same Martians. Jane was presented with no less than three outfits of finest Martian bunny, of a quality that but rarely finds its way on to the open market. Had she desired they would have clothed her in the precious fur from the skin out.

They were grateful to us—but they didn't like having us around. And when *Thunderflame* put in, outward bound for the Jovian system, they booked first class passages for us, notwithstanding the fact that we wanted to return to Earth by the shortest and quickest route. But they didn't like having us around.

It was because of what we knew. And because they knew that we knew it. And because we were constant reminders of the unpleasant fact that the high esteem in which they held themselves was far from universal.

It is not flattering to one's ego to see, day by day, two people to whom it has been revealed, and by a being of a lowly order of life, that one is nothing more than an unpleasantly parasitical pest.

THE END

Reprints—Again !

Since my editorial in the last issue, analysing the percentage of readers we hear from, a small deluge of letters has been arriving from readers I can only place in the former 87 per cent. "unknown quantity" section. This is exceedingly interesting, and has opened out a much wider field of opinion, covering stories, art work, policy and make-up in general. In short, the works.

A number of those new correspondents have brought up a subject I discussed not long ago (in *New Worlds*, Summer 1951 issue), regarding "reprints" from contemporary American magazines, and I feel that a clarifying statement is necessary.

Up until 1948 British authors had only the American magazine market as an outlet for their science-fiction stories. In the sincere belief that there was a demand for a British science-fiction magazine, written by British authors, Nova Publications launched *New Worlds* in 1949. While our authors co-operated to the fullest extent, they still had their regular markets in U.S.A., and it was logical to suppose (from their viewpoint), that they had *two* potential sources to sell their material to, instead of one.

Not many years ago, when the field was limited to a few American magazines, an author would sell all Rights to his works for whatever was offered—in some instances they weren't even paid at all ! If he couldn't sell his work to the existing market it was just so much waste paper and wasted effort. But, now, with the ever-widening field of magazines, books, radio, and TV, authors are jealously guarding the World Rights of their stories. And justly so. Unless they are offered a magnificent sum for a story, they will not release World Rights, but are free to sell the same story to Britain, America, Australia, the Continent, and any other country within the field of the Copyright Convention.

Nova Publications has always advocated that a good story is worth selling to as many nations as possible, and to that end *only* buys First British Serial Rights. It occasionally happens that stories we have seen and bought first, are bought in America as well, and, because of faster publishing schedules there, appear in print before they appear in *New Worlds*. A very small proportion of those American magazines find their way across the Atlantic —hence the apparent term "reprint." In some cases there will have been a title change, or editorial changes. These points, in particular, have given cause for some considerable confusion amongst our British readers.

Conversely, some stories have appeared in *New Worlds* first and later in American magazines. Do American readers lodge the same complaint about "reprints" ? Possibly, but erroneously.

To sum up—science-fiction is now entering the world markets in a big way. The old narrow order of exclusive Rights is a thing of the past. Good stories are *certain* to appear in more than one country at the same time—our best wishes to the authors who have made all this possible.

JOHN CARNELL

ALIEN ANALYSIS

By DAN MORGAN

Life on other worlds may assume human proportions, but the mental processes may be so totally different that Man may not comprehend such alien reasoning.

Illustrated by HUNTER

"I want action, Vanek ! How much longer do you think I'm going to sit around on this godforsaken planet waiting for you to make friends with a mob of green faced, dumb savages ?"

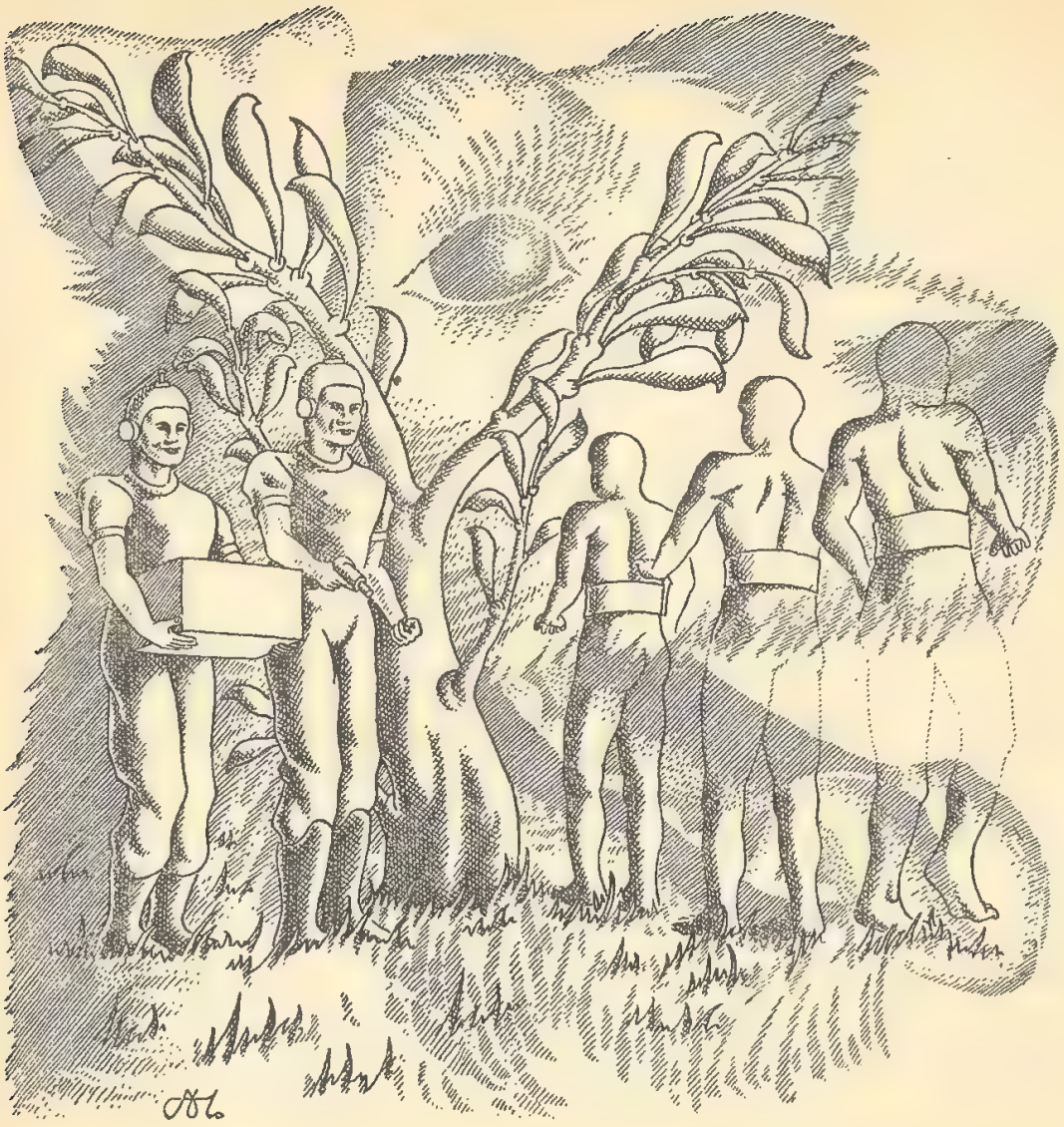
Commander Gibson of Interstellar Exploration Ship *Advar* was not a patient man, and he glowered angrily at the long haired young Chief Psychologist, Vanek.

Carl Vanek lounged back in his chair and lit his pipe in a leisurely manner.

"The Runalians may be green faced and dumb as you say, Commander, but they are certainly not savages. Our investigations show that in many directions they are a highly civilised race. One of the most important things about their culture is the fact that not being equipped with auditory or vocal organs they have developed telepathic communication to a high degree."

"Don't split hairs, Vanek !" shouted Gibson, with mounting choler. "You are supposed to be investigating this planet and its inhabitants on behalf of the Interstellar Exploration Council. We've been here for two weeks, and what have you got to show for it ?"

"These things take time, my dear Commander. Although the Runalians are not particularly alien physically their mental attitude is based upon an entirely different psychology to that of human beings. The main point that is holding us up at the moment is the fact that they will not co-operate. When we first landed a natural curiosity forced them to have some contact with us and enabled us to discover some basic facts about them. Now that they have



decided that we are of a peaceful disposition they take no notice of us whatever. Any attempt at communication has been absolutely ignored. They are not hostile towards us, but for some reason they don't want to have anything to do with us."

"I suggest that you should use more direct methods to persuade them to co-operate," said the Commander. "I don't intend to sit on Runal, five light years from the Solar System, waiting for a crowd of freaks to change their minds about us. If your people don't get some sort of results in the near future, I shall take over and handle the situation in my own way."

Vanek did not enquire the nature of Gibson's persuasive methods. The ruins of the ancient Martian civilisation and a trail of ravaged planets across the galaxy bore mute testimony to the persuasive powers of such men. Man had come to the alien races not as a friend, but as a destroyer, and until he met a race with a superior technology of warfare, so he would carry on. With this thought in mind, some of the more intelligent politicians back on Terra had at last realised that this mad trail of destruction must stop.

Hitherto space travel had been left to the men of action, the adventurers, but the newly formed Interstellar Exploration Council had changed matters. It had decided that in future all newly discovered worlds should be thoroughly investigated by a body of competent psychologists and biologists, and a report submitted. The Council would then decide if and when freelance spacemen should be allowed to land.

Runal was the first planet to come under the new programme, and upon the success of this expedition hung the fate of all as yet undiscovered alien races. It was Vanek's fervent hope that this time man would come as a benefactor and friend.

With a smile of confidence that he did not feel, he replied:

"If you'll give me another forty-eight hours, I think I can persuade the Runalians to co-operate."

The Commander considered for a moment.

"Right, Vanek. I'll give you forty-eight hours. But if you don't produce any results by then, I shall send out a landing party fully equipped with persuasive weapons !"

"That's fair enough, Commander," said the psychologist, rising.

As he walked along the gleaming corridors of the space ship, Vanek ruminated upon the position. That bull-headed spaceman, Gibson, would defeat the whole purpose of the expedition if he was given the chance. Vanek had seen his type at work before, with their blustering ideas about the "superior human race and the dirty aliens." The Runalians certainly were an unusual race with their absolute indifference, but surely there must be some standpoint, some common point of interest which would give him the lead he wanted.

In his preoccupation Vanek almost tripped over a muddy grey shape that came shooting out of the crew quarters chasing a rubber ball. It was a small dog belonging to Rawlins, one of the engineers, and affectionately known to the crew as the Space Hound.

"Come here, you young rascal !" shouted a laughing voice, and the burly form of the dog's owner appeared in a doorway.

Rawlins was a morose individual whose relationships with his fellow human beings were always confined to a few grudgingly uttered monosyllables. There had been some trouble with Rawlins during the voyage, in fact Vanek could not understand how the personnel psyche department had allowed such a man to slip through their screening. He was undoubtedly a first-rate engineer, but he did not get on with the rest of the crew. Strange to see such a man laughing and playing with a dog.

"Hallo there, Rawlins. You seem to be having quite a time with that mutt of yours. Lucky the Commander allowed you to bring him along."

The big engineer looked rather sheepish.

"It isn't a him, sir, it's a her. The Commander's like me, sir. He's got a soft spot for dogs, although he's a hard hearted old so-and-so about everything else."

"Really ? You surprise me," smiled Vanek. "I didn't think the Commander had a soft spot for anything but the Manual of Astrogation."

"Oh yes, sir. Dogs is his weakness. Mine too, for that matter."

"Yes. I've noticed that you seem to get on with her better than you do

with the rest of the crew," said Vanek, wryly.

"That's quite right, sir," replied Rawlins. "There's something about a dog that makes you feel friendly. Sort of brings out the best in you, you might say."

"Hmmm . . . Most interesting. Rawlins, you're a philosopher," said Vanek. Giving the dog a pat he continued on his way.

Reaching his cabin, Vanek sat down at the desk and produced a scratch pad and a pencil. He always found that he could think better with a pencil in his hand. By the time he had finished his deliberations, the paper was covered with an assortment of unintelligible doodles and a few rough notes as follows:

(1) Apart from their green complexion, caused by the presence of a large amount of chlorophyll in the bloodstream, the Runalians resemble human beings physically.

(2) No sense of hearing or vocal organs, but a high degree of telepathy, which makes contact with Terrans possible and solves the language barrier.

(3) In spite of this they are unwilling to co-operate and their attitude is one of complete disinterest.

(4) Their attitude towards their fellow Runalians appears to be equally callous. They are in fact an anti-social and morose race.

Vanek gazed at the manuscript for a few moments, then rolled it up into a ball and tossed it into the waste basket. With an air of decision he picked up the desk phone.

"Get me the Commander, will you ?"

After a short wait he heard a bark which announced that Gibson was on the other end of the line.

"Hallo, Commander. Vanek here. I think I've got a lead on these Runalians. Do you think you could spare an hour to accompany me on a two man landing party ? I want to try a small experiment."

"I've got no time to waste," came the gruff reply. "But if you really think you're on to something let's get going."

"O.K., sir. If you'll meet me at the main airlock in twenty minutes, I think I can promise you some action," said Vanek, and replaced the receiver.

"What on earth have you got there ?" asked Gibson, when Vanek arrived at the airlock carrying a large wooden box.

"Just a little experimental material," replied Vanek, quietly.

As they walked away from the space ship Vanek was struck by a feeling of familiarity. The lush green vegetation with its giant tree ferns reminded him of Earth. Not the Earth of gleaming towers and large cities that he had left months before, but a lustier, primeval world of long ago. He would not have have been at all surprised to encounter a dinosaur crashing its way through such surroundings. However, apart from a number of improbable looking insects that buzzed around menacingly, the jungle was uninhabited.

He glanced at his companion.

"Funny thing there not being any form of animal life in these jungles. Don't you think ?"

"Damned lucky for us, I should say," replied Gibson, gruffly. "Two practically unarmed men wouldn't stand much of a chance against some of the beasts I've run into on alien planets ! I remember one time on Venus

when it took four blasts from an atomic cannon to finish off a giant *Ubrach.*"

He looked down at the needle gun at his belt.

"One of these pea shooters wouldn't be much use in a spot like that. The damned things have got a natural armour plate four inches thick and they move like a whirlwind."

"I didn't necessarily mean dangerous animal life," said Vanek, choking off the stream of reminiscence. "But it strikes me as rather strange that there is no animate life upon this planet apart from the Runalians themselves and these insects."

"You've yet to prove to me that these Runalians are not dangerous," replied Gibson, sourly. "You can never trust aliens. Haven't you realised what an advantage their telepathic abilities would be in warfare ? They'd know your plan of campaign as soon as you'd decided on it !"

"You don't trust anybody or anything, do you, Commander ?" said Vanek, with a smile. "You want to watch yourself or you'll end up with a beautiful persecution complex. The Runalians are not sufficiently interested in us to waste time fighting for no good reason."

Gibson replied with an oath and kicked at an offending root.

"If these green atrocities are as civilised as you say they are, why don't they have the decency to make some sort of a path through this stuff ?"

The two Earthmen pushed their way through the remainder of the jungle in silence. They stopped for a moment in the clearing at the edge of the city. Vanek sensed a slight movement in the tangled growth behind them, and turned. The reflexes of Gibson, trained by years of dangerous living, were quicker. With one movement, he turned, whipped out his gun, and fired into the jungle.

"Hold it, Commander !" yelled Vanek. "It may be one of our own men !"

Gibson reluctantly lowered his gun. The two men watched warily as a Runalian parted the leaves and walked slowly towards them. He was a fine specimen of the green race and wore only the customary metallic belt. Vanek saw at a glance that he was unarmed. His face was expressionless and he seemed absolutely unperturbed by the fact that he had so narrowly escaped death.

Vanek felt the tingling sensation at the base of his skull that heralds telepathic reception.

"I know your purpose, Earthmen. And have been sent to guide you to the Emperor of Runal," the words formed tonelessly in Vanek's mind.

Gibson turned to Vanek with an angry expression.

"They've had us pegged all the way along ! I told you so ! The best thing we can do is to blast this monster and get back to the ship !"

"Let's play it my way, Commander. Shall we ?" said Vanek. Although rather unnerved by the sudden appearance of the Runalian he did not intend to turn back now. He fixed his gaze on the green humanoid.

"We will follow you to your Emperor, Runalian."

"I don't like this, Vanek !" blustered Gibson. "We may be walking into a trap."

"That's a chance we've got to take," said Vanek. Gibson joined him reluctantly and they dogged the footsteps of the Runalian in silence.

As they entered the city a wall of sound hit them like an avalanche. Three-wheeled Runalian vehicles clattered along granite streets with engines loudly

belching exhaust gases. Vanek realised that being without auditory organs this cacophony would not bother the Runalians, but it was certainly hard on Terran eardrums. He began to think that deafness would be a prime qualification for any future ambassadors.

The vehicles were apparently powered by some sort of internal combustion engine. They scooted around in magnificent disorder, totally unlike the smoothly flowing traffic of Terra, with its purring, atomic powered gyro-cars. The confusion reminded Vanek of an old book he had once read which described the streets of Paris in the mid-twentieth century.

Their guide motioned the two Earthmen into a stationary vehicle and drove them through the city with total disregard for life and limb. Vanek reflected that the architecture although not beautiful like the leaning towers of Mars was certainly solid in appearance. The vehicle jarred to a bone-shaking stop in front of a large building. Their guide alighted.

"This looks like the end of the line," said Vanek, with an expression of relief. "Give me a hand with this box, will you, Commander ?"

They followed the Runalian up the stone steps and into a large hall. Vanek realised that this was the seat of government, or at least what passed for government on this anarchistic world. The rows of seats were occupied by about sixty Runalians who sat facing a throne placed upon a large dais which dominated the other end of the hall. The throne was occupied by an unusually large Runalian wearing a gleaming belt of red metal round his waist.

The eyes of this being were fixed upon the intruders. Vanek felt a touch of nausea as the mind of the alien reached out and probed into his brain. The occupants of the seats still sat stolidly and not one head turned in the direction of the Earthmen. Vanek reflected that the backs of the Runalians were even more expressionless than their faces.

Their guide made a gesture obeisance towards the throne and left hurriedly. Vanek glanced at his companion. Gibson's face showed his hostile feelings and his right hand moved towards his needle gun.

"Don't be a fool, man !" exclaimed Vanek, grasping the descending arm. "They won't harm us, they only want to know our purpose here."

Gibson reluctantly dropped his arm and glowered at the Runalians.

"I don't like this damned mind-reading business. It's uncanny."

Vanek felt the familiar tingling.

"What do you want in our council hall ?" came the thought from the Runalians.

Knowing that speech was of no use, Vanek formed the reply in his mind. At the same time he was striving to keep the undercurrent of fear down to an imperceptible level.

"We bring a token of friendship to the Emperor of Runal."

The red belted figure on the throne leaned forward with something like an expression of interest. Compared with the Runalian method of showing interest, thought Vanek, a wooden Indian is practically jumping for joy.

"Advance, Earthmen. And show your token."

Gibson and Vanek walked along the centre aisle with uncomfortable steps. Stopping in front of the throne Vanek placed the wooden box upon the floor. He then proceeded to open it with a great show of ceremony. As he raised

the lid there was a yelp of pleasure and out bounded Rawlin's little grey mongrel, the Space Hound. The dog practically caused a sensation among the apathetic humanoids and Vanek noted one or two slight movements out of the corner of his eye.

The Space Hound ran up the steps of the dais and stood looking at the Runalian Emperor. The Emperor reached down and touched the animal which responded by licking his hand.

"What is this little animal, Earthmen ?" the Emperor returned his gaze to Vanek.

"A dog, your majesty," replied the psychologist. "A symbol of the human friendship we wish to bring to your people."

"This friendship you think of, the concept is strange to Runal. We recognise no such emotion," came the thoughts of the Runalian. "We do not desire any contact with other races. This little dog interests us, however. For as you know, there are no inferior forms of animal life upon Runal. Are there many such animals upon your world ?"

"Upon Earth there are many types of animal, your majesty, but the dog is known as the friend of man."

The Emperor of Runal pondered for a moment.

"You will leave your little friend with us for examination."

With a gesture of dismissal he picked up the dog. Realising that the interview was at an end, Vanek turned to Gibson.

"There's nothing more we can do here at the moment. Let's get back to the ship."

They retraced their steps down the aisle past the rows of silent Runalians and walked out into the sunshine. Their guide was awaiting them on the steps and motioned them into the vehicle.

"What the hell was all that about ?" burst out Gibson. "I can't see that you've made any progress at all."

Vanek smiled.

"On the contrary, my dear Commander. I've at last managed to find a point of common interest with these alien mentalities. Such things take time, but it is certainly a step in the right direction."

"But where has it got you ?" asked Gibson, impatiently. "What results can you show ?"

"Remember, Commander. You gave me forty-eight hours in which to try my methods, so don't expect results immediately. As a matter of fact we scored a considerable success just now. We at last managed to break down the apathetic reserve of these miserable creatures and kindle a spark of interest. Can't you see that now we have done that things should be much easier ?"

"I don't get it," said Gibson. "It sounds like a lot of mumbo jumbo to me."

Further discussion was rendered impossible as the Runalian started the vehicle. The engine came to life with a coughing roar, and narrowly missing a passer-by clattered back through the city. Their guide escorted them to the edge of the clearing without any attempt at communication and left them to their own devices. After the noise of the Runalian city the silence of the jungle was a welcome change, and the two Earthmen walked back to the spaceship in silence.

At the airlock they encountered Rawlins.

"Where's my dog, Doctor Vanek ? You promised to let me have her back in an hour or so."

Vanek looked rather embarrassed.

"I'm sorry, Rawlins. I had to leave your dog with the Emperor of Runal. But you'll get her back later, don't worry."

"You've left the Space Hound with those damned monsters ?" stormed the engineer, thrusting past them. "I won't stand for it ! I'm going to get her back !"

"Come here, Rawlins !" barked Gibson, in a voice that made Space Cadets tremble. Rawlins stopped and pulled himself to attention.

Vanek shrugged his shoulders.

"After all, Commander. It's his dog. I don't think we ought to stop him. Do you ?"

With a grimace of exasperation Gibson turned back to the engineer.

"Alright, Rawlins. Carry on ! But don't get yourself into any trouble, or I'll clap you in irons for the return trip."

The engineer hurried away and was soon out of sight in the tangled undergrowth.

"Well, I've got some work to do, Commander," said Vanek. "I'll let you know if there are any further developments."

He entered the airlock, leaving Gibson with a puzzled expression on his face.

Reaching his cabin, Vanek sat down to consider the events of the afternoon. Some time later the door burst open with a crash. Rawlins entered with the dog in his arms. Livid with fury, he placed it on the desk in front of the psychologist.

"Take a look at that, you blasted witch doctor !"

Vanek examined the still form. The dog was dead. The base of its skull had been pierced by some sharp instrument.

"I'm sorry about this, Rawlins," he apologised. "I can assure you I didn't expect a development like this. If it's any consolation to you, I can say definitely that death was instantaneous. The dog didn't suffer at all."

Rawlins, six foot four of blind fury, grabbed Vanek by the collar of his uniform and jerked him out of his seat.

"You sit there and talk about suffering," he roared. "I loved that dog like it was my own kid ! I'm going to give you some suffering, you mealy mouthed faker ! Then I'm going to get hold of a blaster and show those green monsters a thing or two !"

He drew back a ham-like fist and floored the psychologist with a terrific blow.

When Vanek gathered his scattered wits he was once more alone in the cabin. He dashed over and picked up the phone.

"Get me the main airlock, quickly ! Hallo, is that the Corporal of the guard ? This is Doctor Vanek, Chief Psychologist. I want Rawlins arrested immediately ! He must not be allowed to leave the ship, do you understand ? Put out a general alarm, and when you get him put him in the brig until further orders."

He replaced the phone and felt his bruised chin ruefully. If Rawlins went berserk in the Runalian city he would probably ruin everything. Vanek

sympathised with the engineer in his loss but there were more important matters at stake. This new development in the conduct of the Runalians had come as something of a surprise. Removing the body of the dog he sat down to consider its implications.

Picking up paper and pencil Vanek jotted down the salient points. With an exclamation of wonder he realised that when put in black and white the whole thing added up like a simple equation ! The result was astonishing but absolutely logical. He picked up the phone with an air of urgency.

"Get me Commander Gibson . . . Hallo, Commander . . ."

"What the blazes is all this about having Rawlins arrested ?" came the irate voice. "Two of the guards burst into my cabin and grabbed him just as he was telling me about this dog business. You're rather overstepping your authority, Vanek. Remember, I am in charge of discipline on this ship !"

"I'm sorry about that, Commander," replied Vanek. "But I couldn't let Rawlins ruin everything. If it will make you feel any better, I've got the psychology of these Runalians worked out. I'd like you to accompany me on another visit to the Emperor of Runal, and this time I can definitely promise you results. I'll meet you at the main airlock in ten minutes."

Gibson consented gruffly and Vanek replaced the phone in a purposeful manner. This job was going to entail considerable mental effort and there was no margin for error. He was staking his reputation and indirectly that of the Interstellar Exploratory Council upon this theory. If he was wrong this time he was finished.

Commander Gibson was standing by the airlock when Vanek arrived.

"No dogs or performing seals this time, eh ?" sneered the spaceman. "Going to be a tame show, isn't it ?"

"Don't worry, Commander. You won't be disappointed," replied Vanek, grimly.

The Runalian who met the two Earthmen as they pushed their way out of the jungle motioned them to follow him. He gave no sigh of recognition and as all Runalians were as alike as peas to Terran eyes they could not tell whether he was their guide of the previous occasion.

Apart from a few hair-raising episodes amongst the chaotic Runalian traffic the journey was uneventful. Alighting as before in front of the large building the two Earthmen followed the guide into the council hall.

Vanek braced himself visibly and motioned to Gibson to accompany him up the aisle. The Emperor of the Runalians sat inscrutibly upon the throne watching their approach. They stopped in front of the dais.

"What do you want, Earthmen ? Another has already collected the body of the friendly little animal you call a dog," came the thought of the expressionless humanoid.

"I know that, your majesty." This time Vanek voiced his thoughts aloud, and the sound echoed eerily round the stone walls of the great chamber.

Gibson gazed in horror. Vanek produced a needle gun and shot the Emperor of Runal neatly between the eyes !

"Have you gone mad, man ?" shouted Gibson, as the green humanoid toppled slowly off the dais and lay at their feet. "These damned monsters will massacre us !"

Vanek, his face unusually pale, glanced round at the rest of the Runalians. They had risen from their seats and were moving slowly towards the two

Earthmen. Then he looked contemptuously at his companion.

"Don't worry, Commander. They won't hurt us, as long as we don't get too friendly with them ! Don't you see ? They became fond of the dog, so the kindest thing they could do according to their philosophy was to kill it ! The Runalian attitude towards life is one of unwilling toleration. A complete inversion to that of human beings. This apathy and disinterest of theirs is completely necessary. In point of fact, if they were a friendly race they would cease to exist !

"Whereas the prime instinct of human beings is the will for self preservation, that of the Runalians is for *Self Destruction* ! Don't you see how it all adds up ? Take the fact that there are no savage animals upon Runal. Since remote beginnings the human race has battled tooth and claw for existence against the other forms of Terran life. But upon Runal these green humanoids have had absolutely no competition. They have never had to fight for life, and their heredity has been formed of centuries of life in ideal conditions. The result of these circumstances is that the whole race has become literally bored to death. Although they have this will to destroy themselves another facet of their mentality prevents them from committing suicide. The only way out for them is to find somebody friendly enough to murder them !"

THE END

THE LITERARY LINE-UP

Scheduled for the March issue is Sydney J. Bounds' first novelette, "The Flame Gods," the story of a post-atomic civilisation completely subjugated by religious rulers and faced with an invader from outer space. It makes an exciting and fascinating yarn.

In the same issue will be a new van Vogt story, "Enchanted Village," recently published in U.S.A.—a poignant Martian story most readers will be pleased to see published in this country. E. C. Tubb continues his run of acceptances with "Third Party," a story somewhat different from the usually accepted theme, and J. T. M'Intosh is back with "The World that Changed," telling of the experiences of a space-pilot upon returning to Earth after several years.

Rounding out the issue will be a long story by E. R. James, "Asteroid City," for those who like plenty of action in their fiction.

Final ratings on the Autumn issue placed "space opera" in the lead for the first time !

1.	Cosmic Mirror	Lee Rondelle
2.	The Tree	John Christopher
3.	Greek Gift	E. C. Tubb
4.	Welcome Stranger	Alan Barclay
5.	No Priority	H. H. Boyesen
6.	The Scapegoats	Cedric Walker

WITHOUT BUGLES

By E. C. TUBB

The Red planet was pretty much a dust bowl. As a business project it didn't rate much. Once there, however, it was difficult to return to Earth.

Illustrated by QUINN

The man writhed on the narrow cot, and fought for life. He sat with his head between his knees, his mouth open, a thin trickle of saliva running from one corner down across his unshaven chin.

His hands clenched, twisted, tore at chest and throat. He whimpered, moaned, flung his body in strange convulsions. The skin of his face was blue with strangulation. The sound of his breathing horrible to hear.

They brought oxygen and strapped on the mask. A hypodermic pumped adrenaline into an already overstrained heart. The writhing quietened, the convulsions ceased. Breathing eased and he relaxed.

Strangely he slept.

Dirk Banner turned away feeling slightly sick. He met the cynical gaze of the doctor and jerked his head towards the bed. "Will he recover?"

The doctor, a tall thin man with sparse hair, cold eyes, and an expression of perpetual irritation, shrugged.

"To a degree, yes. Light work only, though. Better find him an inside job."

Dirk snorted. "How could it have happened?"

"He was careless."

"Careless? How do you mean?"

"Worked without a mask. Walked without one. Slept without one. How do I know? But he was careless."

Dirk snarled with baffled anger. "Can you blame him? Do you wear a mask? Do I?"

"Not here. Do you walk around outside without one? If you answer yes to that, I'll prepare a bed. You'll need it."

Dirk flushed. "Sorry, Doc, but it's getting worse. How many now?"

"Twenty hopeless. Fifty over the danger level. All the rest from one to thirty per cent. affected." He dropped a hand on the younger man's shoulder. "Don't let it get you, Dirk. There's nothing that you can do."

"That's what makes it so bad. To see men lying there, helpless, and know there's nothing anyone can do." He turned pleadingly to the doctor.

"Is there any hope for them, Doc ?"

"None." He gestured wearily. "It's not new this thing. It's been with us for over a hundred years. An industrial disease. Silicosis they called it once, and other names, but it all added up to the same thing. Inhaling dust will block the lungs, cutting down the area available for oxygen absorption. Manual activity is reduced, and if unalleviated, life becomes a constant struggle for oxygen to keep alive." He shuddered. "There are worse deaths, but not many."

Dirk nodded absently, then coming to some decision walked towards the exit. The doctor joined him at the inner door, and while they donned thick coveralls and masks, ventured a question. "Any news ?"

"None." His voice sounded hollow through the fabric and filters. "Coming ?" He swung open the door and stepped inside the vestibule, waited impatiently for the inner door to be closed, then together they stepped outside.

It was a depressing sight. A huddle of low rounded buildings, dun coloured, adobe constructed, their surfaces smooth and bearing a faint polish. One building bore the appearance of pre-fabrication, glistening with the sheen of scoured aluminium.

From it, as from all the buildings, cables snaked, meeting at a central point, from there disappearing over the horizon. The streets were just lanes between the domes, unpaved, and thickly covered with a fine powdery dust.

Dirk kicked at it disgustedly. It rose at the impact, hanging like smoke in the thin air, settling in a fine film over his coverall.

"Who would have thought that a bit of dust would cause such trouble ?"

The doctor started to answer, then checked himself, staring into the sky. It was night. The stars shone clear, scattered thick across the heavens. The twin moons raced for the horizon, and a faint glow warned of a new dawn.

Above their heads a star had moved. It seemed to grow, to lengthen. Then it wasn't a star but a slim pencil of flame.

"The rocket !" he yelled. "The rocket !"

He ran to the administration building, stumbling through the dust, sending it flying in great clouds. Seconds later the wail of a siren cut through the thin air.

Within minutes the entire settlement came alive.

Jud Anders drew deeply on his cigar and sent a fragrant cloud billowing towards the fan. The noses of his audience wrinkled with disgust, and he looked his surprise.

"We've been conditioned to dislike tobacco," explained Dirk patiently, "as well as coffee, milk, alcohol and about everything else you can think of that we can't get here. It helps not to like something which you can't get anyway."

"I see," said Anders. "I'd forgotten." He did not attempt to remove the cigar.

"Why are you here, Anders ?" the doctor was abrupt. "You're not here to work, and mass is too important for you to have come just for the ride."

"Why ?" Anders grinned. "Well you might call me a one-man com-

mission. Secretary for Extra-Planetary Affairs." He rolled the title on his tongue. "I'm here to report back to Congress on how things are going."

"He's here to see if you're worth your keep," put in a new voice. "And I'm here to help him do it."

It wasn't what the voice said, it was the tones it said it in. You can condition men to dislike almost anything, but not women, not after living for almost five years without even hearing one. The newcomer received instant and undivided attention.

She stood by the door, swinging a mask in one hand. The bulky coverall hid her body, but that didn't matter. Nothing mattered except that she was feminine. Dirk rose as she came across the crowded room.

"Dirk Banner ? My name's Pat Easton. Short for Patricia. Did it throw you off ?"

"It did rather," he admitted. "I'd expected a man." He knew now why the rocket crew had been so amused. "Are you the writer ?"

"Reporter," she corrected. "Trans-World Communications decided that the public would like to know how its money was being spent. I'm here to find out."

"Pleased to have you with us," lied Dirk politely. "But why you ? Why a woman, I mean ?"

"I happened to have influence," she admitted calmly. "I wanted to come. After all you are making history. Heroes ! Pioneers ! The vanguard of all Earth, breaking new frontiers ! You know the sort of thing."

"No," said Dirk soberly. "I don't think that I do. And I don't think that you do either."

She flushed, and bit her lip, then deliberately smiled over his shoulder. "Why I know you ! Professor Winton isn't it ?"

The doctor grinned sheepishly, and took her outstretched hand. "Just call me Doc." he chuckled. "Everyone else does around here. Have you met everyone ?" He led her away, acting the host. Dirk stood frowning after them. He was annoyed to find that he felt a tinge of jealousy. He turned to Anders.

"Did you have a nice trip ?"

"Nice ? If you can call being crushed by acceleration, nauseated by seven weeks of free fall, then to land in the middle of nowhere, having a nice trip—then I had one."

They all laughed. "That's the romance of space flight you keep reading about," chuckled Mason, the diminutive pilot. "The romance our lady friend was talking about."

Hastily Dirk changed the subject. "How's Luna Base getting on ? Found that vein of rare ore yet ?"

Anders gestured with the cigar. "Found that six months ago. Setting up a proper relay station now. Over three thousand personnel, and growing fast," he beamed. "Those boys are certainly worth their keep. They mine enough uranium to more than pay running costs."

"I've got the news tapes on the ship. I left them until the mail had been distributed," explained Mason. "I thought it would be better to get them settled on mail home first. We're only stopping three days this trip."

"You're staying, of course ?" Dirk asked Anders. "The next ship should

be due in about three months."

"What makes you think that ?" Anders squinted through the cigar smoke. "I'm going back on the same ship, Miss Easton too."

"But I thought that you wanted to investigate the settlement ?"

"Well ?"

"It'll take more than three days to do that. You've a whole planet to see."

"So what ? Listen Banner, all I'm interested in is a straight answer to a straight question."

"And that is ?"

"Only this." Anders was obviously enjoying himself. "Congress has poured billions of dollars into this project. When are you going to start paying it back ?"

A man next to him spat in utter disgust.

Dirk stood watching the sun set behind the rocket. It was a sight he never tired of, and one he thought that could never be equalled. The slender pencil of gleaming metal resting on wide fins. The desert, flaming with all the reds, oranges and yellows ever imagined. An alien masterpiece.

A faint wind blew from the east, rippling the dust, shaping the dunes into new more fantastic configurations. Little clouds scudded over the plain, rising, falling, eddying, pluming, finally drifting to a halt. Dust. The curse of the planet.

He sighed and turned away, almost knocking down the slight shape behind him. They clung together, striving for balance, and through the plastic of the mask he recognised the reporter. He held her, and suddenly didn't want to let her go.

She wriggled from his arms with an easy motion, and dusted herself down. "Admiring the scenery ?"

"I always come to see the rocket," he laughed self-consciously. "A craving for the romantic I suppose you'd call it."

"No. Why should I ? I think that it's a perfectly natural thing to do." She stood looking at him. "You don't like me, do you ?"

"Of course I do," he stammered, "but . . ." He steadied under her calm gaze. "I wish that you hadn't come."

"Why ?"

"There are nearly two hundred men in the settlement who haven't even heard a woman for almost five years. That's one reason, perhaps the best one."

"And the others ?"

He sighed. "Anders is going to be hard enough to handle without Trans-World Communications as well."

"You misunderstand me. We're not against you. Anders takes a pride in being hard-headed. Perhaps a good thing back home where money has to be watched, but not here. Trans-World can help you. That's why I'm here."

"Help ? How can they help ?"

"Public opinion. If the people can be convinced that you are doing a great thing here, then Anders and all Congress are helpless to do other than help you."

"And can they ?"

"Of course," she laughed. "It's the easiest thing in the world. Everyone believes you to be heroes. Brave men battling the unknown," she saw his face and stopped. "I'm sorry. You don't like being regarded as heroes do you ?"

"We're not," he said tersely. "We're men doing a job, and all we want is to be left alone to do it our own way."

"I'm entitled to an opinion." She laughed and put out her hands. "Friends ?"

"Friends." He grinned and squeezed her hand. "But I still don't like Anders."

"Neither do I, but we must work with him." She took his arm as they walked towards the settlement. "What's that building over there ?" She pointed towards the aluminium dome. "It looks so new."

"The food plant. The dust keeps it polished. You know that we live on yeast, I suppose ?"

"No. Why do you ?"

"Nothing will grow in the desert. At least nothing we know of. Food can't be imported, we need so much of everything else, so our first job was to grow our own."

"Do you like it ?"

He shrugged. "It's edible." They walked on in silence. Dust clogged their feet, rising in great clouds around them, settling thickly on their coveralls. From time to time they wiped the eye windows of the masks. The sun had almost set, and their shadows danced fitfully before them, vague in the dying light.

The wind had risen, its passage marked by long rippling plumes across the desert. A thin whine penetrated the masks, and the air became heavy with flying particles.

Dirk stopped and looked at the sky.

"What's the matter ?"

"I'm not sure," he said absently, "but I think we'd better hurry." Taking her arm he began loping forward, leaning well into the wind. Lights gleamed in the settlement. A tractor churned its way in between the buildings, stopped, and immediately became hidden in its own fog. Abruptly a siren began to wail.

"What is it ?" gasped Pat, struggling to keep up with the now running Dirk. "Anything wrong ?"

"Dust storm," he gasped. "Hurry."

In seconds the storm burst upon them. Pat clung to the one solid thing in a nightmare of whining wind and choking dust. Dirk's arm had wrapped round her waist, and dimly she felt him pulling her along. The siren had stopped. A klaxon sounded raucously every few seconds, the sound seeming to come from every direction at once.

She couldn't see. The dust covered the eye windows, and even when she wiped them, it made no difference. Driven by the wind, the dust began to work beneath the coverall. Her skin prickled with irritation, her eyes smarted, the inside of her mouth became coated, her lungs began to burn.

How long it lasted she could never be sure, but suddenly the pressure of the wind dropped. It came again, but this time blowing the dust from her.

Through the now clear eye-windows she could see a muffled shape wielding an air hose. Hands fumbled at her mask, something acrid and nasty filled her mouth, she gagged, spat, gagged again and was suddenly very sick.

The doctor grinned down at her, and turned to Dirk. "She'll be O.K. How about you ?"

He leaned against the wall and gasped for breath. Slowly the blue tinge left his skin, but when he straightened it was with an effort. "I'll live," he wheezed. "Take care of her will you, Doc. I'm all in."

"You need adrenaline," grunted the doctor. "Get that coverall off." He stepped away, and turned just in time to catch the fainting man.

Anders pursed thin lips over a fresh cigar, and carefully applied a light. "Hope you don't mind my smoking," he grunted to no one in particular, "but it's barred on the ship." He blew a thin streamer towards the naked bulb.

The doctor coughed and turned to Pat. "Feel better now ?"

"Yes, thanks," she smiled gratefully. "I must have been an awful nuisance. Where's Dirk ?"

"Checking up on the weather. He won't be long."

Mason sat chewing nervously at his nails. He spat out a shred irritably. "Three days now, and I don't even know if the ship is still standing. Why in hell don't they have windows in these hutches ?"

"Wouldn't do much good if there were." Dirk looked pale and worried as he came through the door. "The storms would roughen the glass or plastic, besides, they'd leak." He nodded to the doctor, smiled at Pat. "The ship's still standing though. When we've cleared the dust you'll be able to blast."

"The storm's over then ?" Mason jumped to his feet. "I'd better get out there and check the ship." He almost ran through the door.

Anders snorted with relief. "Mason was telling me that if we don't blast to-day, we'll have to use an alternative course. Add weeks to the trip. Can you get the ship clear ?"

"No."

"Now see here, Banner !" Anders slammed his fist on the table. "I've a right to demand that the ship be cleared." He looked shrewdly at Dirk. "I can maybe guess why you don't want us to leave, but you're not helping yourself by keeping us here."

Dirk tensed, then relaxed as the doctor gripped his arm. "I don't want to keep you here Anders, but didn't you come for a reason ?"

"I came to investigate. I've written my report." Anders gestured towards the pile of papers before him. "I've been fair Banner, but frankly this settlement isn't worth its keep. Venus Colony needs every ship we can spare. There's virgin territory there Banner, and I'm going to see that this unending drain on public funds is stopped."

In the sudden silence the hiss of the doctor's indrawn breath sounded strangely loud. Pat gave a muffled cry of protest. Dirk said nothing, but from the rest of the men came a murmur. It sounded ugly. Anders blanched.

"I know that you've had your troubles," he protested. "But you must be fair. What have you done in five years ?"

"It's all in the reports," Dirk said mildly. "The first year—investigation, exploration, building the settlement, food plant, atomic pile."

"And the other four years ?"

"Just keeping alive." Dirk sounded bitter. "It's not been easy, Anders. What did you expect ? A uranium mine ?"

"Maybe not, but at least you could have done something to offset the cost. New minerals. New plants. Martian artifacts. Anything. For all the good you've done here you might as well have settled in the Sahara."

"No," Pat protested, her face red with anger. "That's not fair. These men have risked everything. Lived from day to day, given up wives, families, comforts, everything." She turned on Dirk and the others. "I know that you don't like being called heroes, but what else are you ? Who else, other than men utterly unselfish, would have done what you have done ? And because you can't pay for the privilege of living this awful existence, are you

to be thrown aside ? We'll see what the public thinks about this, Anders. I don't think that you'll sit so smug then."

She sat down her eyes suspiciously bright. Anders sighed. "The young are always romantic, and you, if you'll forgive me, are still very young. The public, my dear, can be made to agree to anything. Just tell them the truth—that they are wasting their money on an ideal—and they will yell to have it stopped. Believe me, I know that, and so do your employers."

"We'll see about that. I want to hear both sides of the story, and so will the peoples of Earth," she turned to Dirk impetutously. "Tell him, Dirk. Make him see how wrong he is. Show him what a wonderful thing, concept, dream of all mankind, this conquest of a new world is !"

Dirk sighed and shifted restlessly in his chair. "I wish I could Pat, but I can't."

"Can't ! Why not ?"

"Because he's right, Pat. He's right—and you are wrong." He felt as if he had slapped her in the face.

"You see," he explained dully. "Mars is a dead world. I don't mean a dying world, one which is slowly exhausting its natural resources, but a literally dead world. A murdered world. You have heard of radioactive dusts, what they will do, how utterly deadly they are ? Mars is the victim of such dusts."

He stopped, his eyes straying around the circle of intent faces. Most of them knew what he had to say, to them it was an old story. To the others it was explanation and excuse. The fan made a steady whirring, sucking the air through the filters. Despite the fan a thin coating of dust lay over everything. He drew a finger across the table.

"Once, how long ago we can only conjecture, there was a war, or maybe it was an accident, and radioactive dust was loose on the planet. You know how such dusts operate. They have a half life of maybe days, or months, even years. Where they are scattered life ceases to exist. All life. Animal. Vegetable. The insectivora. The worms in the soil. Even the bacteria. Everything.

"Where the dust lies becomes a desert. Winds scatter the poisoned soil further afield. The deserts spread, and spread, and spread." He gestured towards the outside of the wall. "The results you have seen."

"But surely the soil can be replanted ? Animals imported ? Life begin again ?" Pat leaned forward vehemently.

"Yes. Given time to find suitable plant life. Time to irrigate. Time to find some means of anchoring the dust. But we haven't got time." Dirk looked at Anders. "Mars isn't a place suitable for a short term investment. It will take years. Billions. Thousands of men. It may take a generation. The prize is a complete new world."

"Doesn't that answer you ?" Pat accused. "Isn't that what you want ? Why say he's right, when you know different ? Anders is wrong. And you know it !"

"No," Dirk said listlessly. "He's not wrong. From the standpoint of immediate results he is right. Why should young blood be wasted on this arid world ? Why should we spend a generation on this one planet when there are so many others ?" He smiled at her. "You are an idealist. You

think of Mars in terms of romance. There is no romance. What have we to offer? A few weeks of free fall, then desolation. Work, more work, and then still more work. And at the end—death."

"No," she protested. "Not death. Life. The life of a planet."

Anders coughed, rustling his papers. "I'm glad that you can see things my way, Banner, but there is another point. Congress has voted a vast sum for this development project. There will have to be an accounting." He lifted a hand at the hum of protest. "I'm not blaming any of you, but we must be realistic. You had the finest equipment available. Over two hundred men, and all the supplies we could send you. What have you done?"

"Lived," the doctor snapped. "At least some of us." He turned to the silent Director. "What's the matter with you, Dirk? Why don't you tell this fat slug where to get off? Do you want to see everything we've done thrown away? If you don't care, think of the rest of us. Snap out of it man."

Dirk flushed at the acid tones and glanced half apologetically at the others. "I'm sorry." He stared at Anders. "For the sake of argument I can agree that logically you are correct, but don't go too far. You talk of machines. Equipment. Supplies. I talk of men. At the basis of every civilisation, every development, every monument to Man's greatness, there is one common factor. A simple thing. A man with a shovel.

"Machines are useless without him. We can do nothing without him. He is the one indispensable. And we haven't got him. We never have had him." He gestured at the paper-littered desk. "You can talk of your two hundred men. What does that really mean? Out of that two hundred, fifty cannot do manual labour. Of the rest twenty are a useless burden. The mere act of keeping alive takes the full-time labour of all but fifty of us. We have fifty men to redevelop an entire planet. We are not supermen, Anders."

"But . . ."

"But, nothing." Pat turned to Dirk her face shining. "Did they know this back home? Did Congress know?" She smiled triumphantly at Anders. "Wait until the public read of this, why the offices will be swamped with applications from men eager to use a shovel on Mars."

"Will they?" Anders smiled grimly. "I think not. Five years ago, I will agree. Then we could take our pick, and did, but now?" he shook his head. "There are other frontiers. Luna, Venus, the dark side of Mercury. There is life there, the taste of adventure. On Mars?" He shrugged. "Men are very selfish. Give them the promise of wealth, experience, even the pleasure of killing to live, and they will go through hell itself. But what can you offer? An ideal? Work without profit. Life in a dust bowl. The Sahara offers the same. The Matto Grosso more. They are still undeveloped."

"You're a cynic," Pat accused.

"No, my dear," he corrected gently. "A realist. A settlement such as this must be self-supporting to justify its existence. It must not depend on supplies from home. The settlement must expand, take root, produce children. That necessitates women," he smiled at her. "Would you be willing to spend your life here?"

"Why I . . ." she broke off in confusion.

"To stay here. To bear your children. To live, grow old, die without

ever seeing Earth again ?" He was gently insistent. "Could you honestly tell women that this was a good place to come. And if you yourself are not willing to settle, how can you persuade others ?"

Dirk watched her, heart hammering with emotion. It was foolish he knew, but he desperately wanted her to be willing to stay. She flushed, looked defiant, started to speak then looked up gratefully as a man burst into the room.

Mason swayed, clutched the edge of the table, and tore off his mask. He was deathly pale, and almost gibbered in rage and fright. "For God's sake do something Banner. Your men refuse to let me into the ship !"

They crowded in behind him, a dozen hard-faced men, workers from the blowers and dust clearers. Big men, dust stained, grouping together for mutual support. Dirk recognised them as the latest arrivals; none of them had been on Mars over two years.

He quietened the babble of cross talk and addressed the group. "Who's your spokesman ?"

After a mutter of conversation a tall, burly man stepped forward. "I am."

"What's the trouble ?"

"No trouble. Before he leaves," he jerked a thumb at Anders, "we want to know where we stand. What's this about abandoning the settlement ?"

"Abandoning the settlement ?" Dirk looked at them incredulously. "Where did you get that crazy idea ?"

"In the mail. My folks tell me that it's common talk that Congress is stopping funds, abandoning the project. We want to know what's going to happen to us !"

Dirk looked at them calmly. "I'm sure that you're mistaken. Mr. Anders is from Congress itself. Maybe he can convince you."

"There's no need to worry," Anders boomed cheerfully. "In the remote event of the settlement being closed you'll all get transportation home. You don't think that we'd leave you here, do you ?" He laughed. "Now, how about letting the pilot into the ship ? He won't leave without me, and I won't go yet a while."

The men muttered and shifted restlessly. The burly spokesman ignored Anders and looked at Dirk. "O.K. But we're trusting you, Banner, to look out for us. See that you do."

They left the room, the half threat hanging on the thin air. Dirk turned slowly and stared at Anders. "Is there anything in what he said ?"

"About what ?"

"Abandoning the settlement, of course," snarled Dirk. "What did you think I was talking about ?"

Anders shrugged. "Must we go through all that again ? I thought that you agreed that the settlement was an unsound proposition. I should think that you'd be glad to be relieved. It may take a little time, of course, but everyone will get back home."

Someone laughed. It was the doctor. He had sat unnoticed through the recent excitement. The others, Dirk noted, had left to their various tasks. Despite Anders, life had to go on.

"That's the best joke I've heard since I left home," he chuckled. "Everyone

get back home, eh ? Why don't you tell him, Dirk ? Why don't you show him ? I'd like to see him do it," his laughter had a note of hysteria. Anders frowned.

"I don't see anything funny," he complained. "All I'm suggesting is that it may not be so easy to get you all home as quickly as you may like. The demand on ships for Venus . . ." his voice trailed off.

"In other words," Dirk said bitterly, "the men are right. Congress do intend abandoning the settlement, and us with it."

"No," protested Anders. "Not that. We would never leave the personnel."

"You have no choice," snapped Dirk curtly. He laughed. "Haven't you even guessed yet ? Why do you think we are so intent on keeping the settlement alive ? I told you that it was a hopeless dream. Pat here thought I was being modest, a shy hero—nothing is further from the truth. We want to leave. All of us. The joke is, we can't. We're stuck with our own private hell, and there's nothing anyone can do about it."

"I don't understand." Pat frowned at Dirk and the doctor. "What are you trying to say ?"

"Shall we show them ?"

The doctor nodded, climbing to his feet. Together they left the room.

The ward was quiet, cool, and utterly restful. Extra air pressure eased lungs used to gasping at thin air. The twenty cots stretched down two sides, a narrow passage between them. Apparatus stood about, oxygen, wheeled tables loaded with vials and instruments. An attendant nodded as they entered.

"All restful, Doc."

He nodded and stood staring down at the figure in the nearest bed. It was a man, thin, with waxen skin and unkempt hair. Thin hands lay above the covers, the long fingers almost transparent, the knuckles bulging at the joints.

Pillows behind propped him into a sitting position. He stared vacantly before him, his mouth open, and breathed. That was all he did do. Breathe. That was all he could do.

Pat stared down at him with pity. Then moved to the next cot, and the next.

"They are all like this," the doctor kept his voice low as he stood at her side. "Extreme cases, of course, some of the first effects of ignorance."

"What is it ?" Like the doctor she kept her voice low.

"Dust. When we first came we thought that the dust was harmless. Annoying, of course, but not too bad. We were wrong."

They joined Anders and Dirk. Anders had a shocked look in his eyes. He led the way to the exit, and wiped a suddenly moist face.

"There are twenty of them, the worst cases. Any effort would kill them, the shock of acceleration would be certain death." Dirk looked at Anders. "Now do you realise why we can't leave ?"

"But, Dirk." Pat bit her lip. "Surely those men in there wouldn't want you to sacrifice yourselves. They would understand. It sounds awful I know, but, euthanasia ?"

"No. Don't misunderstand me. I've no compunctions about killing, but it wouldn't do any good." He smiled down at her. "You will insist on

thinking of us as heroes—heroism doesn't enter into it. They are the very extreme cases. There are others, able to sit, even walk a little, who have to be thought of. They can do no manual work but they can watch meters, keep the books, a dozen little jobs. The shock of acceleration would kill them too."

"But what caused it ? Why should you all be forced to stay here because a few men are ill ?" Pat clutched his arm. "I want to help, but I can't if you won't even try to help yourselves."

"We are trying to help ourselves, the only way we can," he smiled at her look of frustration. "There are about twenty men who could return home and live a normal life. There are about fifty more who could survive the trip, but who would be semi-invalids. Of the rest, those who lived through the trip would be bedridden like the twenty you saw.

"Our only hope of all keeping alive is to keep the fit men here to do the hard work. Not only that, but to get fresh replacements for them when they succumb. So, you see, we are really very selfish."

"But you wear masks. Why does the dust affect you ?"

"Show me a single spot within the settlement free from dust, and I'll give you Mars. We can't keep it out. It seeps everywhere. No mask can fully protect us."

Pat nodded, thinking of her experience in the dust storm, the burning at her lungs and the awful irritation of her body. She looked at Dirk in sudden alarm.

"How long have you been here ?"

"About four years," he answered absently. "Mason tells me that you're blasting in a few hours."

She shrugged as if the news was unimportant. "How is it that you are free of the dust poisoning ?"

"Am I ?" he gestured carelessly. "Luck I guess. I've been careful."

"Why lie about it ?" The doctor's cynical voice sounded from the door. "She'll be wondering why you don't propose," he grinned at her without humour. "If he won't tell you, I will. Take him to Earth and he will spend the rest of his life in bed. Not a long one at that."

He took Banner's arm and gently led him away from the sobbing girl. "She had to know, Dirk. Better now than later."

Behind them the sobs sounded strangely loud. The first ever heard on Mars.

They stood at the edge of the field watching the activity around the rocket. Men, muffled in their coveralls and masks, cleared the last of the stores, loaded on the few crates of dust for the return load. It was pitifully little to send in return for the years of development.

Dirk felt at peace now that Pat knew, somehow something had dissolved between them. It was good not to have to pretend. He smiled down at her.

"Did you enjoy your stay ?"

They both laughed. From the foot of the ramp a diminutive figure waved at them. Mason signalling a last farewell. Pat shivered suddenly.

"Cold ?"

"No." She was unnaturally curt.

"What do they think of us back home, Pat ? The people, I mean ?"

"Some think that you're heroes, the rest that you're fools." Still the same dull tone. He took her shoulders and turned her to him.

"What's the matter, Pat ? Aren't you on our side any more ?"

"Oh, Dirk !" Suddenly she was in his arms, trembling with emotion. "Why does it have to be like this ? Why can't you come home ?"

"Because of the gravity, darling." The unnatural word came easily to his lips. "With the lesser gravity we need less oxygen, less lung absorption surface." He laughed, trying to cheer her up. "It's not so bad. With you helping us we'll have all the supplies we need, men too." Gently he stroked the quivering figure.

Anders came ploughing through the dust past them, the doctor striding like some ungainly bird beside him. He called out as they passed. "Only five minutes left, Pat. Better get aboard if you don't want to spend the next three months here."

Dirk lifted an arm in acknowledgment. Beside him the girl lifted her head.

"Dirk ? Would it hurt to take off the masks for a minute ?"

He considered, frowning at the circle of dust cleared from the rocket by the giant blowers. There was no wind; aside from the drifting plumes caused by the feet of Anders and the doctor, the air was clear.

"I guess not. Not for a few seconds, anyway."

"Good. Then take it off." Hands suddenly trembling he did as she asked. Pat blushed as her mask came free. Wordlessly she lifted her lips. To Dirk the kiss was sheer heaven.

Then she was gone, running across the dust to the waiting rocket. He watched her reach the ramp, climb the incline. The port dogged shut, the ramp flung clear. Automatically he replaced his mask.

A warning blast from the ship's siren stirred the air. Flame started from the swelling venturis. Muffled thunder tore at his eardrums, and slowly the rocket lifted towards the stars.

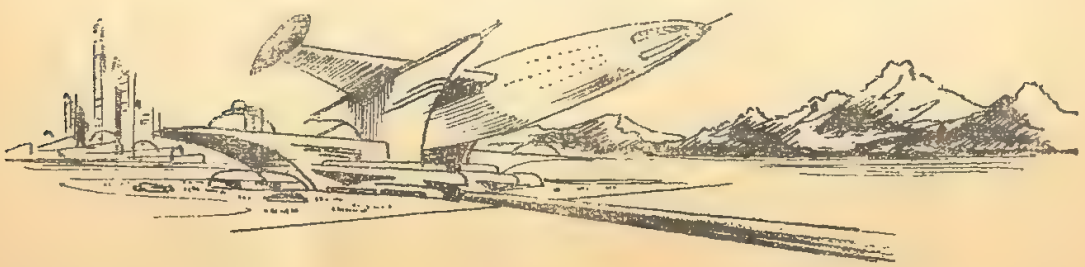
He watched it until it was high overhead. Until the sound of its passage had echoed over the desert and lost itself in silence. Until the finger of flame had dwindled, shrunk to a point, had flickered, and vanished among the thousands of other points glittering in the sky.

He felt a hand on his shoulder. It was the doctor, a bundle under one arm. "She'll be back," he said with calm conviction. "One day she'll come back."

"Why should she ?" Dirk asked bitterly. "What have we to offer ? Why should anyone but a fool come to Mars ? Why would anyone ever come here again ?" He turned away, lost in the memory of a kiss.

Mockingly the dust rose around him.

THE END



A MATTER OF SALVAGE

By SYDNEY J. BOUNDS

Salvaging a wrecked spaceship was a tricky business. Especially when a bunch of crooks tried to hijack it during transit.

Illustrated by HUNTER

The space-radio chattered like a mad thing. The signals crackled erratically, jamming together in a frenzy of desperation, then fading in strength, dragging out like a comet's tail to empty silence.

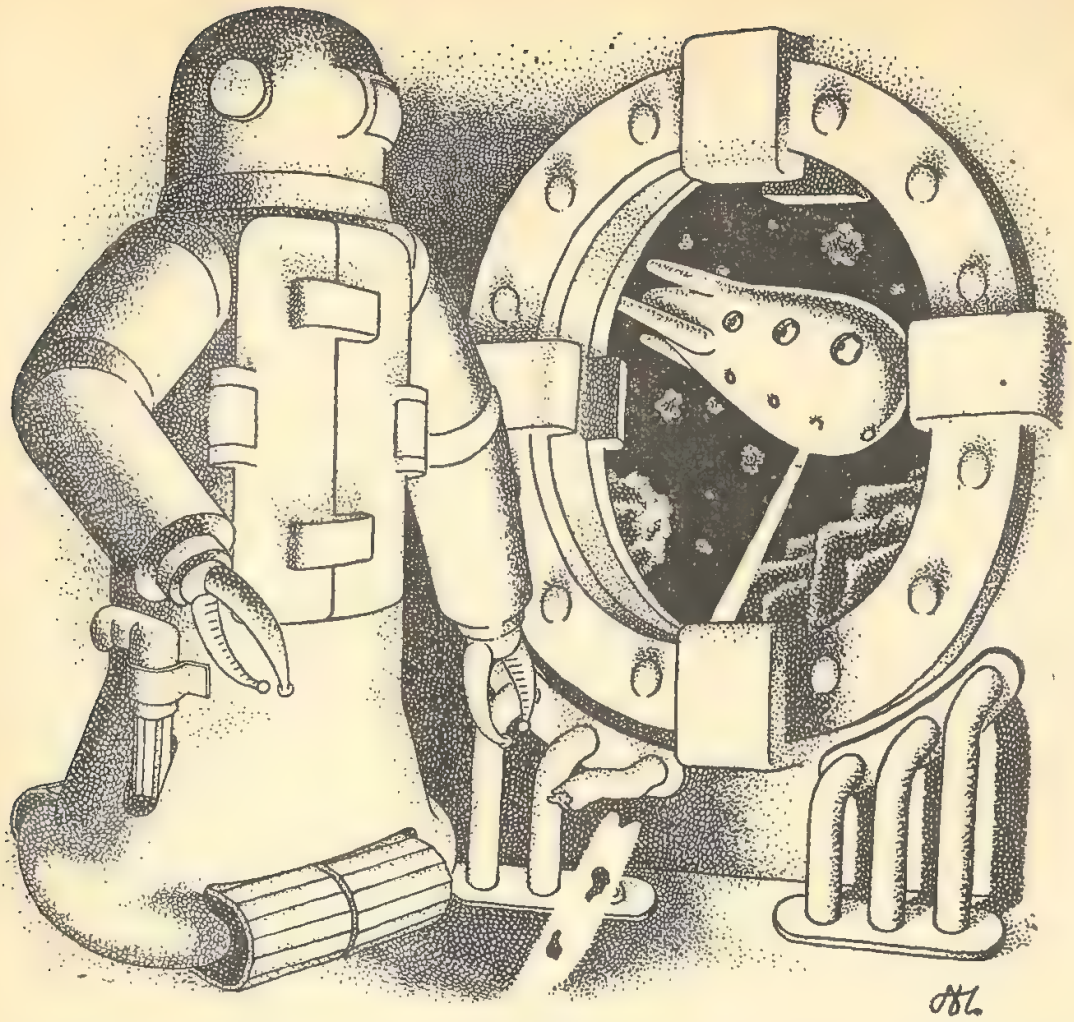
S.O.S. Spaceship Starshine *out of control in asteroid belt. Warning. Danger from radioactivity. Protective sheathing of atomic pile fractured and radiation leaking through. Control room uninhabitable and remote control system inoperative. Crew abandoning ship.* Starshine *carries valuable cargo of Jovian ragweed and captain authorises salvage.*

The message ended.

Hilary St. Clair spun the dials of the visiscreen, scanning space for the *Starshine.* The screen showed a lightless void, then, as he increased the range of the scanning rays, chunks of barren rock spinning in tangled orbits. His fingers played over the visiscreen's controls, enlarging his area of vision.

The asteroid belt grew into a complicated pattern of planetary debris, each individual member pursuing its own path through the void between Mars and Jupiter. There were thousands of the asteroids, some two or three hundred miles across, others no bigger than Hilary's mining ship: all were barren rocks, streaked with mineral veins, airless and lifeless.

He located the *Starshine,* focused the visiscreen on it. The ship was a slender silver cylinder spinning end over end in an orbit about one of the larger asteroids. Its rocket tubes were dead and the ship had been captured



by the asteroid's gravity field. *Starshine* moved in an elliptical orbit, swinging nearer the frigid rock with every circuit, losing velocity; it could only be a matter of time before the ship crashed on the asteroid's rugged peaks.

Even as Hilary watched, ports opened in the *Starshine's* hull and chemically fuelled lifeboats sped out into the black maw of space. One . . . two . . . three. Three tiny splashes of crimson lit the void as rocket trails marked their course for the emergency station on Ceres. *Starshine's* crew were safe; it remained only to salvage the derelict.

Hilary called Ceres on the space-radio.

Hilary St. Clair, Asteroid Miner Number 1076, claims salvage rights to the derelict Starshine.

The message was a matter of form; it would carry little weight unless he was first to reach the ship. He fired his ship's rockets, accelerating slowly as he wished to avoid a period of blackout; he was too close to the derelict to rely on automatic controls. He had to retain consciousness for manual operation.

Then he saw the second ship. It was approaching from the direction of Jupiter, travelling fast. Against the velvet blackness of space, the second ship was a tear-drop shape of pale green, rocket jets trailing a faintly luminous cloud of radioactive gas. It was an atomic-powered ship, much faster than

Hilary's mining ship. He used the space-radio again, transmitting to the new arrival.

Hilary St. Clair, Asteroid Miner Number 1076, claiming salvage of the Starshine. *Stand by in case I need assistance. I will pay usual twenty per cent. of salvage money if I need your help.*

There was no answering signal from the pale-green ship; it pursued its course towards the derelict in silence. Hilary frowned. Whoever captained the second ship could only have one reason for not answering: he intended to beat Hilary to the *Starshine* and claim the salvage money himself.

Hilary plotted his own course and timed it against that of the tear-drop shaped spaceship. He calculated he could win the race; although the other ship was larger and faster, he was nearer the derelict. He concentrated on getting the last ounce of speed from his ship, changing course so that he need only circle the asteroid once to place himself alongside the abandoned ship.

Hilary's soft brown eyes shone with excitement; he needed the salvage money and he didn't intend to let anyone beat him to the *Starshine*. He had to win the race and take the derelict in to Earthport—and it was more than a matter of money. His honour was at stake.

Hilary was cramped in the tiny control room of his mining ship, more cramped than his fourteen stone liked. He was short and fat, with ruddy cheeks and curly hair, and as unlike the typical lean and tough asteroid miner as it was possible to be. And, of course, he was only twenty years old.

But he had pluck and determination; that was why he'd bought a second-hand mining scow and come out to the asteroids. His mind was set on joining the Interplanetary Space Guard, but the Guard had turned him down—recruiting didn't start till a man reached twenty-one. The other recruits had poked fun at his bulk, calling him fat and flabby; they'd jeered at his name, saying it was a girl's name. Hilary had grinned good-humouredly and bought himself a mining scow; anyone was free to mine the asteroid belt and he wanted to prove he was as tough as the next man.

He hadn't done too well, mining for rare minerals in the belt. His fuel was running out and he didn't have the money to buy more; unless he struck lucky, his short career as an asteroid miner would come to an abrupt end. But the advent of the *Starshine* gave him a last chance to make good.

If he could take in the derelict to Earthport, he'd collect salvage money and prove that his bulk was no drawback to a man with courage. And then, the Guard might reconsider his application for a commission. Yes, it was vitally important to Hilary St. Clair that he reach the derelict ahead of the pale-green spaceship . . .

He circled the asteroid, cutting his jets one by one, manœuvring nearer the *Starshine*. When he was hard by the silver cylinder, he rocketed a steel hawser across the void; the hawser clamped on the hull of the derelict by a magnetic disc, joining the two ships as one. Together, they spun round the asteroid, two metal cylinders at the end of a steel cable.

Hilary watched the Geiger counter; its silence told him the *Starshine's* radioactivity had not yet leaked through the hull in measurable amounts. He glanced in the visiscreen; the pale-green ship was decelerating, forward tubes blasting hot gases into space, coming towards him.

Hilary grinned; he had beaten them to it. No one could dispute his

salvage claim now that he had the *Starshine* in tow. He ignored the second salvage ship and prepared to board the derelict. That was necessary for him to decide his course of action; if the radiation leak was bad, he might cut off the affected section with a high-pressure gas burner—or he might transfer the cargo of Jovian ragweed to his own ship. On the other hand, if the radioactivity was not highly dangerous, he could tow the ship to Earthport as she was. But he had to be sure.

Fortunately he had a lead suit aboard the scow; it was part of every miner's equipment for handling the radium deposits sometimes found in the asteroids. It was a heavy affair, more like a young tank than a spacesuit; the walls were one foot thick lead and the legs and arms operated by battery; it had a built-in Geiger counter, oxygen cylinders and visiscreen. He crawled into the lead suit and passed through the airlock of his ship to outer space.

The black emptiness was oppressive. There was no sound, no air, nothing. Space extended before him like a dark mist; so far away that no ship had yet reached them, distant stars glittering like precious gems in a soft velvet cloth. The pale-green ship moved closer, still decelerating.

Below him, the asteroid drifted by, a sterile world of jagged peaks and cruel ravines. It reflected a faint light, enough to show him the steel hawser stretched across the void between his scow and the *Starshine.*

Hilary grasped the cable with the claw attachments at the end of his lead arms and swung outwards from his ship. Hand over hand he pulled himself towards the derelict, moving slowly and carefully so as not to drift into the void. He had a hand blaster strapped to his waist in case of emergency; with it, he could shoot himself back to the ship, using its reactive force—but he didn't want to waste time manoeuvring in space.

He reached the *Starshine* and opened the outer door of the airlock. He went in, through the inner door to the passageway running the length of the derelict. He closed the airlock automatically; his Geiger remained silent; there was no radioactivity in this part of the ship.

Just beyond the airlock, someone had discarded a rubberoid spacesuit; Hilary stepped round it and went for'ard. He soon found out why his Geiger was silent; lead doors sealed off the bow of the ship, the section containing the atomic pile and control room. Hilary discarded his lead suit for speed.

The air in the *Starshine* was fresher, more invigorating than that of his tiny scow; that was because the larger vessel had room to fit a better type of air-conditioning plant. He enjoyed breathing the ship's atmosphere; it reminded him that Earth held a crystal pure air and delightful breezes, and he longed again to feel the salty tang of the ocean on his face.

He walked aft, to the store rooms, enjoying his freedom of movement. His fourteen-stone bulk wasn't cramped as it had been on the mining scow. He located the holds and whistled breathlessly; every compartment was full of Jovian ragweed. The *Starshine* was carrying a veritable fortune.

The weed looked like bundles of dirty rags—hence the name—and gave off an offensive odour. Despite its unattractive appearance, the weed was particularly valuable for dealing with certain Earthly diseases. It was the weed's medical properties which made it so valuable.

The cargo was too large to be transferred to Hilary's scow; that meant towing the *Starshine* as she was—a tricky job for a small mining ship.

Perhaps he would call on the pale-green spaceship to help him. He moved for'ard again, debating the point. With such a valuable cargo, he could well afford to pay the captain of the second ship twenty per cent. of the salvage money. He decided that was what he'd do.

The radio room was opposite the airlock he'd entered by. He went inside and called the pale-green ship.

Hilary St. Clair speaking. Starshine's *radioactivity confined to bow section. I intend to tow her in as she is, and offer you twenty per cent. for your assistance. Do you accept?*

An answer crackled back.

Captain Nick Tesla and two men from the salvage vessel Fortune *coming to inspect derelict.*

Hilary bit his lip. If he'd known it was Tesla aboard the other ship, he wouldn't have been so keen to ask for help. The captain of the *Fortune* had an unsavoury reputation. He signalled:

No need for further inspection. Do you accept my offer?

The space-radio made no comment. Hilary stared through a porthole; across the dark void, three spacesuited figures propelled by reactive blasters, rocketed towards the *Starshine.* Hilary waited by the airlock, uncertain as to how to deal with his visitors.

The inner door swung open and three men came through. Tesla, tall and lean, opened the visor of his helmet to reveal a tanned face and sharp, black eyes—eyes that held a sardonic, mocking light. He said, laughing:

"So you're Hilary St. Clair, Asteroid Miner Number 1076, claiming salvage of the *Starshine*? That's too bad—because I'm taking her in to Earthport. And I'm claiming one hundred per cent. of the salvage money."

Hilary's hand came up with his blaster in it. His face was grim as he said:

"You're not getting away with this, Tesla."

One of the men behind Tesla opened his visor to show a sallow face adorned with a moustache. He barked:

"Drop your gun, St. Clair!"

The third man didn't speak; he stepped sideways and fired from the hip. His shell struck Hilary's blaster, knocking it from his hand, numbing his arm.

Nick Tesla smiled and waved a lean hand airily. He said:

"I think I am going to get away with it. Jerry, see that the radio has an accident—we don't want our fat friend sending any more messages."

Jerry, the one with the moustache, went into the radio room.

"Ceres knows I'm on this job, Tesla," Hilary said slowly. "They're going to think it funny if I don't bring her in."

The man who had shot Hilary opened his visor. He was a short man with a hare-lip. He snarled:

"Shut up! The boss can figure all the questions—and the answers."

"That's right, Parker," Nick Tesla drawled, "I'll do the thinking on this job. You keep St. Clair covered and blast him down if he tries anything."

Jerry came back from the radio room. He reported:

"I gave it an overload. The radio is just a heap of fused wires and tubes; it'll take a complete rebuilding before anyone can use it."

"Good." Tesla turned the porthole and signalled his ship with a hand-lamp. He said to Hilary: "I hope there's no one aboard your scow. They're in for a hot time if there is."

Hilary watched through the porthole, unable to stop Tesla. He saw the *Fortune* manoeuvre into position; a pale-white ray lanced out from Tesla's ship, shearing through the steel hawser linking the scow to *Starshine*. The scow began to drift away.

The white ray centred on the tiny mining ship, changing colour as Tesla's ray operator stepped up the intensity; it changed through yellow, to green, to blue. It glowed violet, then red—a deep, fiery red.

The scow turned red too. Metal plates became red-hot under the attack and began to melt with the intense heat. The scow changed form, buckled, steel girders twisting and coalescing into shapeless blobs of incandescent metal. When the ray stopped, Hilary's ship was a helpless, drifting hulk . . .

Jerry said: "What are you going to do with Fatty, boss ?"

Nick Tesla laughed.

"It was careless of St. Clair to leave his spacesuit in such a conspicuous position." He gestured to the rubberoid suit by the airlock. "Empty the oxygen cylinders, Jerry."

Jerry, grinning, turned the cock opening the valve. Oxygen hissed out to disperse in the *Starshine's* air. In a few minutes, the cylinders were empty, the suit useless.

"That takes care of that," Tesla said humourlessly.

Hilary's ruddy cheeks lost their colour; he had little doubt that Tesla intended to kill him. His only consolation was that Tesla hadn't discovered his lead suit; the rubberoid spacesuit had put him off the scent.

Parker's hare-lip quivered. He said, gesturing with his blaster:

"You want me to kill him, boss ?"

Tesla shook his head; his black eyes smiled cruelly.

"No. This has to look like an accident. When we reach Earthport, St. Clair's body must be found—unharmed. We'll return to the *Fortune*—and use the ray to bore a hole in *Starshine's* hull. The air will rush out and St. Clair will die. It will be assumed that a meteorite pierced the hull—an unfortunate accident. And we will collect salvage !"

Parker chuckled at the cunning of Tesla's plan. Jerry said, uneasily:

"Let's get back to the *Fortune*. I can't forget there's only a lead door between us and a leaky atomic pile."

Tesla nodded.

"There's nothing more for us to do here ——"

Hilary didn't wait any longer; he hadn't much hope of beating three men in a fight, but he had to take his chance—and Tesla didn't want him shot. He swung his fist to Parker's jaw, putting all his fourteen stone behind it. He'd forgotten his wrist was numbed . . . the blow hurt him more than Parker.

Tesla cursed. He reversed his blaster and struck Hilary over the temple. Hilary went down, fighting for consciousness.

"Outside," Tesla said. "Leave him, Jerry."

Hilary tried to get up; his head throbbed and his legs were too weak. Helpless, he watched Nick Tesla and his two men fasten the visors of their helmets. They went into the airlock and the door closed behind them. Hilary was alone on the *Starshine*.

It was minutes before he was able to stagger to a porthole. Three rocket

flares marked the crooks' course to the *Fortune*; he saw them board the pale-green ship. It would not be long now before Tesla used the ray, boring a hole into the *Starshine*, letting out the air.

Hilary thought wildly; he had to act quickly if he were to save himself. But what could he do ? His scow was useless; the radio out of action; he had the choice staying aft—which would shortly be airless—or going for'ard, into a radioactive hell. His position seemed hopeless . . .

There was one slim chance; Tesla had overlooked his lead suit. Hilary hurried for'ard and found the suit where he had left it. He crawled into the armour and wondered what his next move must be.

The *Fortune* swung nearer; a white ray lanced out, burning brighter as it bored into the *Starshine's* hull. The ray stopped when a hole the size of a man's hand appeared; the *Starshine's* atmosphere rushed out into the void.

The *Fortune* was manoeuvring in space; Tesla rocketed steel cables between the two ships. Magnetic discs fastened the cables in place. The *Fortune's* atomic drive started; radioactive gas blasted from rear jets and the two ships moved off. *Fortune* accelerated slowly; Tesla didn't want to put too much strain on the cables. And he was in no hurry to reach Earthport—he could afford to take his time over the salvage.

But time was against Hilary St. Clair. For the moment, he was safe. But his lead suit did not contain oxygen for many hours; he would be dead long before the *Starshine* docked at Earthport unless he acted promptly. He considered his position, rejecting one solution after another.

There were three possible courses of action open to him. One, to cross to the *Fortune* and attempt to capture the ship; he rejected that as impracticable —Tesla had too many men on his side. Two, patch up the hole in the aft section and start the auxiliary air supply generators; he could then wait for the ship to reach Earth, surprise Tesla and his crew and hand them over to the Space Guard. He rejected that idea because of the danger from radio-activity; it could only be a matter of time before the leak worsened and the whole ship was flooded with deadly radiation. Three, he could enter the for'ard section and attempt to repair the damage to the atomic pile.

It was a daring solution, but not one to be undertaken lightly. The danger would lie in the extent of the damage; his lead suit would protect him for a short time—but he would need to effect repairs quickly, before the radiation penetrated his suit. And that would depend on just how bad was the fracture in the protective sheathing of the pile.

Hilary decided to take the risk. He approached the lead door sealing off the bow section; swung on the giant wheel controlling the automatic locking device. The huge door edged open.

Immediately, his Geiger counter started ticking. Radioactivity leaked through the gap. Gritting his teeth, Hilary turned the wheel. The Geiger chattered like an insane typewriter as he got the door open wide enough for him to squeeze through.

Sweating, he entered the section housing the atomic pile. He could not move quickly in the lead suit; his movements were awkward and clumsy—and now, of all times, he wanted speed and sureness. The radiation affected his visiscreen, blurring the image. That was something he hadn't anticipated; for a moment, he panicked—then calmed down; he had to go through with it.

There was no other way.

The chamber was semi-circular with the pile in the centre, shining metal tubes leading aft to rocket exhausts. A ladder went up through the roof to the control room. Hilary moved towards the pile, a cube of carbon and uranium blocks completely sheathed in a thick wall of lead. The cadmium damper was fully inserted, reducing radioactivity to a low level; nevertheless, the radiation leaking through the crack in the lead casing was enough to give him some uneasy moments.

He found the leak and inspected it, standing to one side. Not that *that* protected him; it simply made him feel better to be out of the direct stream of alpha particles and gamma rays. His visiscreen annoyed him; the image blurred and faded, showing bright streaks across his field of vision, making the crack appear to move across the wall of lead.

It wasn't a bad fracture, but he had to work fast. And speed was impossible in the heavy lead suit he wore. He set up a crucible and placed bars of lead in it; lighted a pressure burner and placed it beneath the crucible. The lead melted in seconds. He poured the molten metal into the crack; repeated the process again and again.

His skin began to itch and his ears tingled; radiation had begun to penetrate his suit. He wouldn't be able to stay in the chamber much longer. He kept melting lead and pouring it into the crack until the protective sheathing had a bulge of metal round the fracture. His Geiger ticked sporadically; most of the radiation had been sealed off.

Satisfied, he went aft and repaired the hole in *Starshine's* hull. Then he set the air generators working full blast to give the ship an atmosphere. He returned to the for'ard section and inspected the pile again.

His Geiger was silent; the leak had stopped and all radiation had vanished through the hull to outer space. He slowly removed the dampers and set the pile in operation, removed his lead spacesuit and went up the ladder to the control room.

He grinned as he studied the instrument panels; Nick Tesla was due for a shock. *Starshine's* jets fired; a radioactive cloud of gas shot forth and the two ships strained at the cables. Hilary increased firing pressure; the hawsers groaned silently, frayed and snapped. *Starshine* and *Fortune* parted company . . .

Hilary whistled happily as he set a course for Earth. Nick Tesla couldn't touch him now and it was only a question of time till he touched down at Earthport's spacefield with a cargo of Jovian ragweed. The salvage money would be very welcome—even more important, he had proved his courage in the face of odds. The Space Guard would deal with Tesla when he reported the affair and, perhaps, they'd reconsider his application for a commission.

He didn't think anyone would call him fat and flabby after he'd brought in the *Starshine;* he didn't think they'd say he had a girl's name now.

He glanced through the porthole. The pale-green ship was no longer in view. Space, dark and empty, stretched to the stars. Smiling, he prepared his report:

Hilary St. Clair, Asteroid Miner Number 1076, claims salvage of the derelict Starshine . . .

THE END

ELECTRONICS—TO COME

By FRANK G. KERR

Super gadgets on spaceships are ideal—in fiction. In practice most of them won't be so practical, as Mr. Kerr points out here.

Most science-fiction readers have read of "visiplates," meteor-detectors, subspace radio and any number of similar devices. Quite often the authors who mention such devices go into a fair amount of detail in their descriptions of them—once upon a time science-fiction stories consisted almost exclusively of such descriptions. Mercifully, we are nowadays usually spared these tedious and frequently painfully unscientific lectures, though the gadgets remain.

And these devices are very often electronic, which is to say that they use the same techniques as radio, radar and television. (There's even an electronic space-drive, which we'll discuss later.) Now, what will happen in the far future, when interstellar drives and subspace radio will have circumvented the inconvenient top limit of the speed of light, is anyone's guess. On the other hand, it is possible now, in the immediate pre-space age, to forecast with some (but not too much) confidence, the Shape of Electrons to Come so far as the first fifty years of interplanetary travel are concerned.

The obvious first application of electronics is in the communications, or radio, field. The ordinary radio listener, who may at some time have heard a faint, wavery voice on the short waves announce that "This is Radio Australia," might now be tempted to get a pencil and a piece of paper, divide the distance from the Earth to the Moon by that from England to Australia, and come up with the answer that radio between the Earth and the Moon would be twenty times as unreliable as it is between England and Australia.

Far from it. Radio waves, like light waves, travel in straight lines when they can; you hear Radio Australia in England through the courtesy of the "ionosphere" (Heaviside and other Layers), fifty miles or so above the Earth. Radio Australia sends out waves of say twenty metres' wavelength, and some of these waves bounce off the Heaviside Layer, back to the surface, up again and so on till they reach your aerial. Reception is often wavery because the temperamental Heaviside Layer continually changes, so that the amount and direction of the reflected waves are always changing. The received signal varies correspondingly.

If we use short enough waves, they will pass right through the Heaviside Layer and on into space. (Television waves, for instance; that's why you rarely hear of TV reception much over a hundred miles. A man with even an ordinary TV set might, in the right spot in space, receive Sutton Coldfield over fantastic-seeming distances.)

Another thing—an ordinary broadcasting station sends waves out fairly evenly all round. If the waves are short enough they can be concentrated into a beam by quite a reasonably sized reflector instead of fanning out. Just as the mirror in a searchlight concentrates the light where it is wanted, the radio transmitting aerial, with a reflector, concentrates the waves on the "target"—say the Moon or Mars.

So interplanetary radio is quite practicable, if we use waves shorter than five metres or so and reflectors. There are practical details, such as the means of compensating for the Earth's daily rotation so that the beam always points towards the target—but astronomical telescopes have been fitted with such devices for years. If the stations are not close to the Poles communication with any given point in space could be carried on for only twelve hours out of the twenty-four—but even that's better than most terrestrial long-distance radio communication. And the very powerful interference which the Sun produces would make communication with stations in a direct line with ours and the Sun quite impossible.

Even so, reliable communication could be maintained between planets with surprisingly low powers, if beam aerials were used at both transmitter and receiver. A good part of the energy, or power, produced by a terrestrial radio station is absorbed by the ground and the Heaviside Layer—a factor not present in interplanetary communication. It might be predicted that interplanetary television will not be long delayed (though for technical reasons to do with band width and noise it's not as easy as ordinary radio).

In fact, one use of space stations in orbits around the Earth which has been very seriously considered is that of providing world-wide TV coverage. Three stations, spaced equally around an orbit 22,000 miles from the centre of the Earth, could do this very economically; at that distance the stations would go round the Earth once in twenty-four hours, so that from the Earth they would appear to hang motionless in the heavens. Quite low powers could be used to provide very reliable TV reception all over the world from the three stations.

Now for a warning. A radio-telephone conversation with someone on the Moon or farther out is quite feasible, but would probably end in a nervous breakdown. Light, and radio waves, travel at 186,272 miles a second, plus or minus a few m.p.s. Even from the Moon the double journey takes three seconds, so the expensive conversation would be full of very distracting three-second gaps.

Planet-to-rocketship radio is also possible, and not too difficult if the ship takes the initiative, or if its position is accurately known to the planetary operator. Ship-to-ship radio would be possible, with present techniques, only if one ship knew the other's position accurately.

So much for radio. How about the meteor spotter ?

Several such devices have been described with a fair degree of plausibility. The basic idea is that a ship-borne transmitter sends out a short burst, or "pulse," of radio waves, and this energy spreads out around the ship. Any meteors in the vicinity reflect some of this energy back to the ship, where it is received. The time interval between the transmitted pulse and the received reflection from a given meteor corresponds to twice its distance (since the waves do the double journey), and the direction from which the reflection comes gives the bearing. If a succession of such pulses is sent

out and the reflections analysed, the position, course and speed of any meteorite in the vicinity can be found, and the controls can be rigged to take evasive action if one looks like coming dangerously close.

All this was a remarkable piece of prophecy. The above is a very fair working description of some types of gunlaying radar developed during the late war, except that these *ensured* a collision between target and shell instead of avoiding one between ship and meteor. It would work beautifully, too, if real meteorities were like the cottage-loaves which sailed slowly past the rocket in the film "Rocketship X-M," emitting rumbling noises (in airless space !) as they skimmed the ship's side. In fact, real meteorites travel very fast indeed—faster than any rocket we could build for a long time yet. This means that they must be detected very early, while they are yet a great way off. This in turn means two things, (*a*) that the rate of repetition of pulses cannot be high—because the reflections from one pulse must get back to the receiver before the next pulse is transmitted—so the computer which calculates the courses will not get much information before the meteor hits, and (*b*) the amount of power which would have to be transmitted to get a reasonable reflection would be inconceivably vast. (The power required for such a radar system goes up as the eighth power of the range, other things being equal—to double the range, you need two hundred and fifty-six times the power !)

Seemingly a grim prospect for interplanetary travellers—if some writers are to be believed, space is so full of meteorites that these writers' ships, with their (as we have seen) hopelessly inadequate automatic meteor avoiders, would look like colanders five minutes after leaving atmosphere.

In fact, though, there is no need to worry. A lot of meteors burn up in our atmosphere every minute, but the Earth's a big target with a strong gravitational field. Most meteors are like grains of dust, and though a meteor the size of a marble could (because of its speed) do quite a bit of damage to a rocket, meteors even that size are rather rare. The chances of a rocket being seriously damaged by a meteor are astronomically remote ! In any case, a meteor spotter radiating enough power to detect a marble at a thousand miles (as it would have to, to be any good) would radiate more than enough to vaporise the meteor before it reached the ship !

No, the meteor spotter is both unpractical and unnecessary, and it is to be hoped that nor more is heard of it.

The "visiplate" (view plate, vision plate and so on) is in a different category. If you saw "Destination Moon," or "When Worlds Collide," you may remember that the ships were fitted with beautiful colour-television systems so that the pilot could see what went on outside. Certainly, such a "closed circuit" TV system (with wires between camera and screen, and no radio link) would be very nice. Except that present cameras aren't quite sensitive enough to give a decent picture of the stars, these devices could do all that is claimed for them. Colour television is a commercial proposition in America, and even plain black-and-white TV could be useful for take-off and landing in some circumstances. (The name "visiplate" was invented before the modern system of TV using cathode-ray tubes was well known, and the name has stuck.)

Even so, the first rockets will have to be at least nine-tenths fuel tank, and every pound lifted is precious. The weight of a TV or visiplate system could

be used for a far more valuable landing aid, which will be mentioned later; closed circuit TV will have to wait until rockets are more developed before it's incorporated, either as a landing aid or as part of the intercom. between the luxuriously appointed staterooms. (And it is very much to be hoped that by that time a slightly less horrible name than "visiplate" will have been found.)

We said above that the first rockets will be mostly fuel; but fuel will nevertheless be the most precious commodity. Any means of saving fuel will be an advantage, and one of the best ways is to reach "escape velocity" as quickly as possible. This means the biggest acceleration the occupants of the ship can stand, say five gravities. The men in the ship will then seem to weigh five times normal, and won't be much use for piloting. Therefore the take-off will be largely automatic.

A landing on Earth might be made without fuel by gliding the ship in, using air resistance for braking. But there's no air on the Moon and little on Mars; rockets will have to be used if the ship isn't to hit Mars with a bump. But, again, to save fuel, the ship must be slowed at the last possible moment. This again means five gravities, so that a pilot-controlled landing would be very tricky, visiplate (in glorious Technicolor) or no visiplate.

But there's no need for the pilot to do the landing. A radar set, combined with a computer, could be designed now which would: scan the planet's surface for nice flat spots; select the best available; time the rocket firing; correct automatically for deviations; and bring the ship into a gentler touchdown than could a human pilot under ideal conditions. Which would you sooner have; that, or a visiplate ?

When the interplanetary routes are opened up, radar beacons might well be of material assistance in navigation. The "Eureka" beacon used during the war in conjunction with the airborne "Rebecca" interrogator might form the basis for beacons in the asteriod belt, to distinguish one tiny world from another. The Rebecca transmitter in the aircraft sends out a pulse, which the beacon receives. In turn, the beacon sends a pulse, which is picked up by two very directional aerials on the wings of the aircraft. The time between the transmitted and received pulses gives the range, and the relative strengths of the signals in the aerials give a rough indication of heading—when the signals are equal, the aircraft is heading for the beacon. Several aircraft could use the same beacon at once, and the use of different wavelengths for the aircraft and Eureka (derivation obvious) beacon transmitters gives, among other advantages, a choice of twenty different beacons available with only five distinct wavelengths. For navigation in space, in three dimensions, three or four receiving aerials would be necessary.

Other electronic equipment may be used for: navigational computers (to relieve the navigator of much of the mathematical donkeywork of his job); remote ("servo") controlling, both manual and automatic; various beacons and other navigational aids which we haven't space to touch on; and a large number of assorted odd functions such as air temperature and pressure control, accurate navigational timekeeping—the "quartz clock"—and so on.

One remarkable conception remains to be discussed. It was mentioned earlier: the electronic spaceship ! The idea is that, in a cathode ray tube such as the ordinary TV picture tube, a hot "cathode" emits electrons,

which are negatively charged. On the principle that opposites attract, these electrons are drawn towards positively charged metal parts, or "anodes," in the tube—but the tube is so arranged that the electrons shoot *past* the anodes and, in the TV tube, strike the screen and cause it to glow. Well, an electron is small, but it has mass, so if only *enough* electrons can be shot fast enough from the electron gun (as the internal tube assembly is called) we have a sort of electric rocket. The principle is quite sound, but there are big snags —particularly those hidden in the phrase "*enough* electrons." All in all, it looks as though this "ion rocket," as it is known, is a long way in the future if it will ever be practical at all.

Electronics is often called the "modern maid of all work." It is certainly an art with applications far outside its original job in radio, and it is, as we have seen, quite well up even now to the foreseeable requirements of space travel—as far as techniques go. But we haven't mentioned the worst snag of current electronics, and that is Reliability, or the lack of it. A television set is simple compared with much present-day gear, let alone such devices as the radar automatic landing gear described earlier, and all too many TV set owners know that these "simple" sets are liable to break down. Lives will depend on the flawless functioning of the landing gear, which would be seriously upset by the failure of only one of hundreds of valves, condensers, resistors and so on.

The problem is recognised, and already a great deal has been done to improve the reliability of electronic equipment. But it isn't enough yet for many much less exacting terrestrial requirements, let alone anything as vital as that.

Still, there's a little time left before the landing gear will be needed, though perhaps not much . . .

THE END

THE EDITOR REGRETS . . .

that the following magnificent stories, written especially for your entertainment by some of our top authors, will not be published in the next issue—

PERFORMANCE TEST

Chain reaction, a chemist, and author John K. Aiken at his best combine in one of the finest *science* fiction stories ever written.

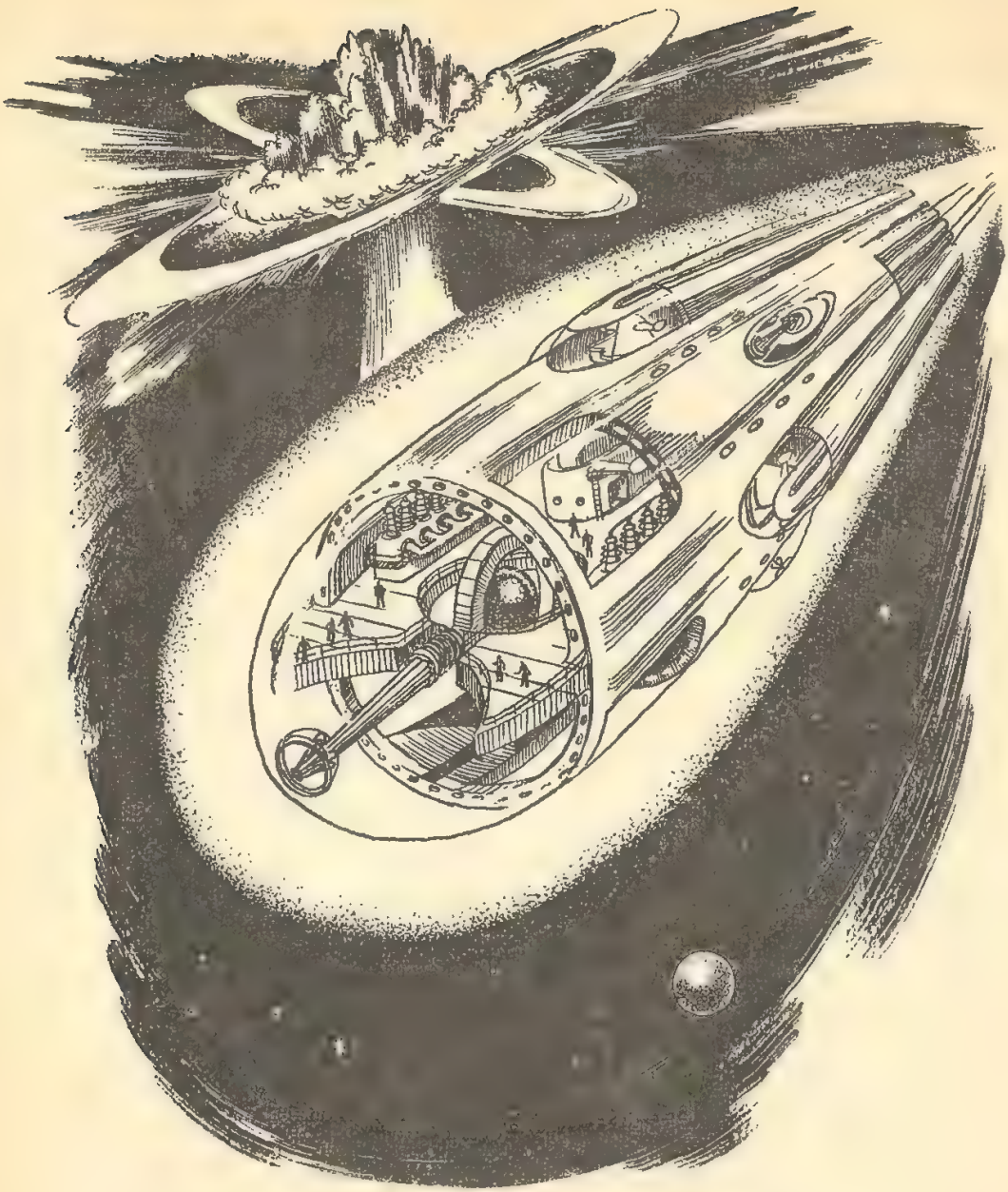
. . . *MAN'S QUESTING ENDED*

F. G. Rayer's great sequel to "Time Was . . ."

BREAKING POINT

A further John Christopher adventure of Manager Max Larkin and the Genetics Division.

BUT THEY ARE COMING SHORTLY!



OPERATION EXODUS

By LAN WRIGHT

Earth's teeming millions had to be shifted to another system, or perish. The scouts ran into an alien ship interested in the same section of space. The problem—what attitude to take with the alien . . .

Illustrated by CLOTHIER

From the forward control room of the *Exodus One*, Rod Shannon searched the star-strewn depths before him, his radar viewer sweeping from side to side, while occasionally his eyes moved to the automatic plot recorder where an ever-changing flicker of lights around a red spot indicated the proximity of all heavenly bodies over planetary size. The steady hum and click of machinery around him was a monotonous music which did not disturb his thoughtful concentration, so used to it had he grown during three long years of such continuously familiar sounds.

His mind was running over those three years while his eyes were busy; three years crowded with space wandering that he had shared with his crew of fourteen hundred. There had been fifteen hundred when they had started out, but the inevitable mishaps of space had taken their toll, and nearly a hundred brave men lay now in the dust of strange planets or drifted timelessly through space in broken suits that had been ripped asunder by one mischance or other.

Shannon's head turned as the sliding door was pulled back and his second in command entered the room.

"Hallo, Number One. What's new ?" he queried.

"Radowski's plotting some minor star about half a light year ahead," replied Jeff Waring. "He took a shot on it an hour ago so he should be reporting soon. Shall I reduce power ?"

"Is it the right type ?" asked Shannon.

"Well, it's bigger than Sol, nearly four times, Radowski said, but its spectrum is roughly the same. He doesn't know about planets yet, but it's probably got quite a family."

Shannon considered for a moment. After nearly a hundred disappointments he ought to have got used to the idea of raising the men's hopes and then having to dash them again, they were probably as hardened to it as he was by now. He cursed himself for a sentimental fool and then jerked his head in agreement. "Reduce power to five radii, we'll cut to light speed in an hour if Radowski doesn't come through, then we shan't overshoot if he's late."

Waring grunted and withdrew. Not for the first time did he curse Shannon's apparent slowness of thought. It seemed to him that the Captain was incapable of giving a quick, decisive answer to straight questions, and he never tried to understand the workings of the man's mind in general. He always seemed to do the opposite of all the advice his experts gave him. True, he usually came out right in the end, but it nearly always caused a lot of unnecessary work and trouble, and it had been a very close thing on more than one occasion. Like the time they hit the acid storm on the fourth planet of Canopus IX, all the experts had said wait to get the engines fixed under cover of the protective screen, and then get out fast, Shannon had gone into a huddle with himself for an hour and then came out with the astounding decision that they would blast off under rocket power with the screen up, and then do the repairs with the screen down well outside the planet's death-dealing atmosphere. Half the crew had nearly had hysterics at the thought of using rocket power; rockets were only carried as a half humorous concession to the Interplanetary Safety Commission. After all if a deep space ship had a wrecked warp generator all the rockets in the Universe wouldn't have got her home before her crew had beards down to their ankles. All the explanation Shannon had given was that he considered that the protective screen might break down if power was reduced to the minimum necessary to repair the

warp field, and that if the screen failed the acid storm would eat through the ship's hull like a hot wire through butter. The protective screen had failed as it happened and Waring had sworn at the time that Shannon had all the gods of Hell working hand in glove with him to make his advisers look the congenital idiots they felt at the time.

Waring went to Radowski's laboratory where he found the stellarogist sifting the information that his instruments had given him about the yellow star millions of miles ahead.

"Anything yet, Prof ?" he asked as he entered.

The sallow-faced Pole grunted sarcastically. "What should there be ?" he countered. "Sure, we got a star, it's like the others, it conforms to all the specifications, it could have twelve or more planets, and at that rate four of them could be habitable." He flung his stylopen on the table irritably. "Just as it's happened ninety-seven times before, Jeff." He rose and crossed to the space port, looking out broodingly at the rapidly changing star scenery, "Doesn't it ever get you, Jeff, ninety-seven times we've approached a star that looked like it had what it takes, and ninety-seven times we've hit what ? Acid storms, dead worlds, chlorine atmospheres, alien life forms, and heaven knows what else. Do you remember that planet of Hercules Five ? We thought we'd got it that time—a planet with an oxygen-based atmosphere, luxuriant vegetation, and no signs of civilised life. We couldn't figure out why the animals had no lungs and only a peculiar chlorophyl substance for blood; and before we had time to find out Jennings went and then Morrison, and their crews with them. Think of that, thirty-six men and a week's slaving over the problem before we found out that the planet's atmosphere was also its population. Some alien form of life that we couldn't even guess at let alone understand, intertwining pockets of life force which we began to breathe the minute we took off our suits. That was why those creatures had no lungs, it was the only way they could exist in that environment."

He broke off and rubbed a hand round the back of his neck, "I'm sorry, Jeff, guess I've got the willies to-day. Three years of hopping round the Universe searching for something that never turns up and may not even be there is beginning to get me, I reckon."

Waring laughed, "You worry more than anyone else on board, I do believe," he said.

"So I should," snapped Radowski, "I'm the guy everyone on board trusts to find a few habitable planets for two thousand billion people to settle down on."

There was a moment's silence, and then Waring asked, soberly, "What are the chances, Prof ? Really, I mean ?"

Radowski shrugged, "One—perhaps two, in the whole of the Galaxy. Life is not uncommon, as we have found out these last three years, but our kind of life is, if we had just been looking for a habitable planet our search would have been over long ago, the first system we investigated had life in it—of a sort. The trouble is to find a system which can be inhabited by the human race, and that is a very different thing, as we are finding out."

"Still, there are other ships ?"

The stellarogist laughed harshly. "Don't fool yourself, Jeff, we were given five years, at the most six, to find something. That left us three, at the most

four years in which to transport two thousand billions and their belongings across light years of space to a new system. Can't you picture it? There will be less than twelve months to evacuate four planets if we don't find anything until the eighth year; there'll be riots and massacres, murder and looting; there'll be fanatics preying on the people, helpless hordes interfering with the work of loading the ships and evacuating the people, crowds will rush every ship as it's due to take off, and under those conditions we'll be lucky if one ship in ten gets clear and safely away. And then what? Those that get away won't have half the things they'll need to rebuild civilisation on the new worlds—none of the books, instruments, tools, and records that'll be wanted if they're to do even fifty per cent. of the job. Man is a victim of his own environment, he hasn't the physical capabilities that he had millions of years ago—what portion of civilisation is saved will be too weak to survive long in alien surroundings, and it'll crumble, collapse and die."

Waring grinned wryly, a little overcome at the usually quiet Pole's outburst. "At least it'll be given a chance," he said. "Man has climbed too far to sink back into the mud like that without a struggle. If you think that all you've said will come true, it might have been as well if Carey hadn't found that wandering star that's going to knock old Sol to kingdom come."

"It had to come," replied Radowski. "Scientists have known for centuries that the giant star which was the cause of the Solar System would come back. Now it's happened, that's all."

"That doesn't mean that mankind is through, though. If only one ship accomplishes what we all set out to do it'll give us a chance to fight back. After all, this isn't the first kick in the pants the human race has had, and I'll take a large bet that it won't be the last."

Radowski laughed. "It's a good job they chose an optimist as second man in this crew, Jeff, or we'd all have folded up long ago."

"I'll go tell the skipper we're going in," returned Waring with a grin. "After all this could be that chance in a million you were talking about just now," he glanced sidelong at Radowski and was met with another cynical laugh.

"It could be, but I doubt it. Now be off and let me find this Eldorado you're so sure is just around the corner."

Shannon was still in the control room when Waring got back, and he turned a questioning eye as his subordinate entered the room.

"Sol type star all right, it could have twelve planets, he's not sure yet. May I cut to light speed now or we'll overshoot?"

"All right, Number One, we'll coast in and hit about eighteen hundred in the third watch," said Shannon, "I'm going to turn in and get some rest. Take over, please, but call me as soon as we get close in."

Shannon didn't bother to undress, but threw himself down on his bunk as he was and lay staring at the grey deckhead above him. His thoughts were a turmoil of speculation and surmise as he turned over in his mind the reams of information he had to remember. At present they were within three months flight of Sol, in fact at no time during the voyage had they been more than six months out. There were other ships further out, a hundred or more, each with one particular section of space or one particular island universe to search. Their trips would take a year, even two years in each direction, with but a few short months left for exploration. Back on Earth, Mars, Venus,

and the dark side of Mercury, engineers and spacemen were slaving night and day to build the thousands of ships that would be necessary to start the great evacuation of mankind from the danger area of the flaming giant that was even now plunging towards the doomed system. Carey and his associates had said nine years, at the most ten. Ten short years to find a new star with fresh green planets capable of supporting the teeming millions which would be dropped on them, planets where man could settle and prepare to resume his upward climb after he had recovered from the shock of the disaster which was so close.

Shannon wondered which was worse, to be out here, searching with hopeless desperation for something that never seemed so far away as when they were close to it, or back there, toiling endlessly and waiting for the return of a ship which never came, which might never come.

His own secret fear which he admitted to no one, was that they would get back to Earth too late and find that another ship had found a new system, and that everyone would have left without leaving behind them a trace of where they had gone. He knew it was stupid because there would always be someone left on the doomed planets, people like the Patriarch, Elmer Lessing, who from the outset had declared that he would never leave the planet which was his home. He was too old to start life all over again he said. There were others, too, fire and brimstone gospellers, who shouted that this was God's punishment on man for his wickedness, and that the human race should not try to escape the doom which had been chosen for it, and which was to purge the Universe forever of its evil. Sentimentalists ? Cranks ? He did not know; all he knew was that if it was God's vengeance then neither his nor any other ship would find a livable planet in a thousand years let alone ten. He laughed cynically to himself as he thought of all the "stay-at-homes" fighting around the last ship to leave for the promised land. He'd lay odds that they would be there, cranks and sentimentalists, for self-preservation was as strong in the human race to-day as it had been in the distant days when man had first walked erect on his hind legs and lifted himself above the level of the beast.

He opened the view port over his bunk and looked out at the starkly glittering brilliance of the Galaxy around him. They were not going so fast now, Waring was decelerating. A good lad was Waring. Impulsive like all youngsters. Shannon had been the same way himself back in his twenties, just before the discovery of the stellar drive, the terrific sub-atomic power which warped the very space through which the ship was travelling, and brought the stars to man's doorstep. He was always wanting to tear about the Solar System, making landings on uninhabited, unexplored asteroids, the millions of airless, black chunks of rock scattered in a belt around the Sun. Twice he'd nearly been demoted for foolhardiness, and each time only his brilliant record as a junior space captain had saved him.

Then had come the stellar drive, and more and more space ships with more and more men to work them. They needed more officers who knew the intricate logarithms of navigation by which a ship from one tiny planet could reach out into space to a star myriads of miles away at a speed many times that of light.

Like a few hundred others Shannon had got a head start, and he had been awarded his Captain's Gold Star ten years earlier than he'd expected as a

result of the discovery. The whole Universe had been open before him, he was one of the chosen few, the elite of the Solar System who were to carry man's banner to the stars.

He remembered the fateful day three and a half years ago, when the President of the World Council had broadcast over the interplanetary radiovisor from London telling of the discovery of the wanderer from outer space. There followed the months of feverish activity to make ships ready for the long voyages to seek out the salvation of the human race—the only hope—evacuation.

The *Exodus One* had been almost completed at the time of the announcement, and it had been only a matter of a few weeks before she was ready for the mission. He'd been like a turkey-cock when they'd given him to her, with full power to hand pick his crew, and he'd used that power to fill her with fifteen hundred of the finest spacemen in the system. How suddenly had he been sobered by the silent multitudes at Canada Spaceport from whence they left, the million or more people gathered solemnly from all over the world to watch the beginning of the last faint hope for the survival of the human race. They had not cheered as they'd cheered Lavrier, the first man to set foot on the Moon, or Henry Morgan, the giant, red-bearded Briton who was the first man to land on a planet outside the Solar system. It had not been until that moment that he had realised exactly what it all meant to him. That was surprising because he had always prided himself on being a far-seeing person, but it had taken the silence of a multitude before it really dawned on him exactly what he was up against, and what would be the result if he and others like him failed in their mission. In his huge hands was the fate of ten million years of development, with Man slowly climbing upward, sometimes slipping back, often hanging precariously, but at last near the top, with the Universe before him for his conquest. In his two hands——

The clamour of the alarm jerked him off his bunk like an uncoiled spring.

In three years that alarm had never sounded save for practice and there was no practice due now, that was a certainty.

He reached the control room quicker than he had ever done before, and noted with an almost unconscious chagrin that at least five of his juniors had beaten him to it.

"What's wrong, Number One?" he snapped.

Waring's eyes danced over the banked dials and screens of the master control, his face had a tight, greyish expression. He replied, "There's a space ship out there, sir."

Shannon gasped, "Nonsense, none of our ships are operating near this sector." His voice held a blimpish tone of disbelief.

"Exactly, it isn't an Earth ship, it doesn't react," said Waring flatly.

"Meteorite, then?"

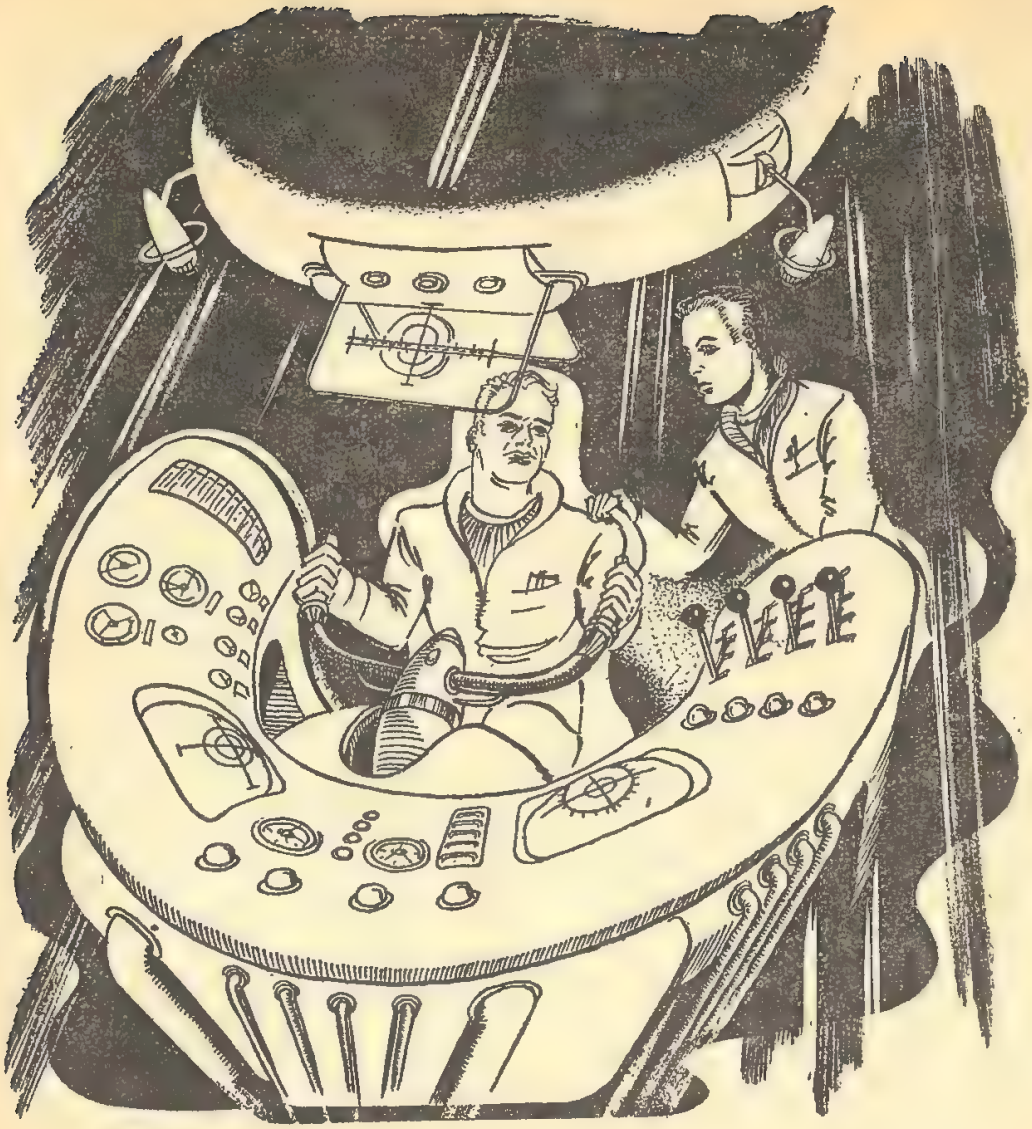
Waring shook his head, "That's what I thought at first, but when it altered course—"

Shannon picked up the phrase like a striking cobra, "Altered course? In which direction?"

"Towards us, slightly, but more in towards the star."

"How far off?"

"Coming in from zero four seven on the port bow, zero three four elevation," Waring read off the dials. "Around thirty million miles."



"Any sign that they've spotted us ?"

"Apart from that one change of course they've given no sign, but they could have done and are just lying doggo until we do something. I've done nothing to let them know we've seen them."

Shannon nodded, the fact was rapidly sinking in that at last they had met up with the outriders of another race, a race capable of interstellar flight and all the implications which went with it. The evergreen plot of the science fictioneers, the first contact with another people. Perhaps they were natives of the system ahead, or perhaps they too, were on a voyage of exploration, and had come in from another quarter of the Galaxy like the *Exodus One.*

"Keep her on course. We'll let them make the first move. How far are we from the star ?"

"About four hours flight," said Waring. "Our course will converge with their's practically in the middle of the system if we keep going as we are."

"We'll hold on as we are," said Shannon.

They held on for ten minutes, half an hour, two hours, while the distances between them and the alien, and them and the star ahead closed slowly and

steadily. No one moved in the control room, all eyes were watching the view screens and the instruments, waiting for the least sign that they had been spotted, and below them, throughout the ship the crew waited too, and speculated in whispers on the astounding thing that had happened.

It was Waring's voice that broke the silence, loud and slightly cracked it was, as he reported, "She's altering course."

"Close up to full state of action," rapped Shannon, "now perhaps we'll know what's in the wind."

A tumult of thoughts raced through his brain as his eyes took in automatically the readings of the master control. If the alien was headed for home then it indicated a highly civilised form of life on the planets of the star ahead, alien—more than likely, but capable of space travel at ultra-light speeds; if that was so then they could reasonably hope for a flock of that one's sister ships on their tail before much longer.

Then, too, it could be an exploratory ship from some other world, like theirs, seeking new fields to conquer. Perhaps they, too, were oxygen breathers, in which case there could be bloody war for any habitable planets that lay ahead, and in that event one, perhaps both of them would find their graves ahead, and neither of them would get home to spread the news of the discovery.

Shannon's lips tightened as he thought of the latter possibility. There had been no war in the Solar system for nearly four hundred years, not since Carlyles Raiders had tried to set up bandit rule over the planets of Mars and Venus and to strangle the Earth's economy. True, ships were still armed and manned as fighting units, but not a man of his crew had any actual battle experience, save at practices, and he wondered how they would react to such conditions if it came to it. He thanked his stars that someone, years ago on the Space Flight Commission, had the good sense to insist that all deep space vessels be armed, in case the thousand to one chance came up and they found themselves in contact with an alien and hostile race. Now it had happened, and Man for the first time was faced with an alien race, possibly a hostile one, which could dispute by force of arms Man's hopes of Galactic conquest. At least, that was the way Shannon saw it, he hoped he was wrong.

Waring's voice broke in on his thoughts, announcing the ship closed up for action.

Shannon's mind worked quickly on his tactics. If the others were hostile, he figured, he would soon know it; and if they were not then they could still make the first move, anyway.

"Keep her as she goes, Mr. Waring," he ordered, "we'll let them show their line first, then we'll act accordingly." He turned to Steiner, the spectrologist, whose eyes were glued to the ulta-light spectrum. "Got anything yet ?" he asked.

"Nothing that's identifiable," said the American, "traces of iron in the body of the ship, but it shows up mainly as a new metal or maybe an alloy, it's like nothing I've seen before on the spectrum. There's carbon and oxygen, traces of minor elements that indicate a similar evolution to our own, they could be oxygen breathers. It's much the same as our ship on the radar screen, except that it's shorter and fatter. There's no sign of rocket propulsion and no reaction to the spacewarp indicator."

"A different kind of drive." Shannon's was a statement rather than a question.

"Could be," nodded Steiner, "whatever it is it's effective."

Shannon's lips pursed. The signs all added up to a similar type of evolution as Steiner had suggested, and that didn't tell him the answers he wanted to know. If it had been a new type of evolution it would at least have told him that they would have nothing to fight about, except sheer bad temper. As it was he couldn't relax his guard for an instant.

"Think we should cut our speed any more ?" asked Waring.

"Yes, we don't want to give them any sign that we've spotted them, and if we keep this up we're liable to overshoot and that would give us away. No, we'll go straight in and circle the outer areas of the system and see what happens; it'll give us a chance to get some data before we have to take action—I hope. Keep the screen up just in case they let fly at us, in the meantime they can do the manœuvring."

"They've turned towards us," broke in Waring excitedly.

"How close now ?"

"About twelve million miles."

"Down to a hundred thousand and still falling."

"Keep her steady," ordered Shannon. "We may know soon, now."

They crept in towards the outer reaches of the strange sun's system, and ahead of them gleamed like a jewel the yellow light of the strange star itself, still three thousand million miles away and in that space perhaps ten or twelve planets, some of which might mean salvation to the Earth's imperilled millions.

Radowski entered at that moment. "Having trouble, eh ?" he laughed.

"Where have you been ?" snapped Shannon.

"Getting the information you wanted," answered the Pole with a sarcastically surprised lift of his eyebrows.

Shannon pushed back the remarks that rose to his lips. Radowski was a good man, however embittered. "Well ?"

"Like I said, twelve planets, that's all at the moment. I thought you wouldn't mind if I came up here."

"Why ?"

Radowski shrugged, "I'd like to be around if anything happens, and I can carry on from here and give you the dope as I get it."

Shannon grinned slightly. Despite his apparent unconcern the stellarogist was as interested as he was in what was going on.

"All right," he said. "But mind, I want a few habitable planets out of you if you do stay."

They crept in towards the star, and Shannon was aware of a dull ache in the pit of his stomach. He tried to throw it off, and wriggled uncomfortably in his seat, hoping no one would notice, but he couldn't shift it. It was this damned waiting, he decided to himself, if only something would break.

"They've stopped," said Steiner suddenly, and almost on his words came Radowski's clipped excited voice.

"The third planet out reacts as an oxygen-based world. It's got an atmosphere, it's a bit bigger than the Earth, not much though, and the spectrum is about the same."

"What about the others ?" asked Shannon.

"I'm checking, but the whole system seems to be on a par with our own, except that it's bigger." He broke off suddenly, and there was a pause while they waited anxiously for his next words.

"The fourth and fifth planets add up, but they're bigger, a whole lot bigger than Earth, nearly twice the size, gravity will probably be a lot stronger, but they have oxygen atmospheres."

"What else ?" snapped Shannon.

Radowski shook his head, "We're not close enough in yet—to be sure we'll have to go close, into the atmosphere if possible."

Shannon's mind was a turmoil. At last it looked hopeful, unless—in the excitement he had almost forgotten the aliens. If they too, were strangers there was only one answer—destroy them. The human race couldn't risk contact with another race until they had become firmly established on the new worlds, and if he destroyed that ship contact might not be made for thousands of years, if ever. If the aliens were from the system ahead and he destroyed them, their people would get to know about it, and that fast. That being so they would almost certainly try to destroy him and his ship in revenge, or else try to find out where he had come from so that they could wreak greater vengeance later on, and with that threat hanging over them they could never go home again, knowing that to do so would be to bring a fleet of hostile ships to the stricken planets. He was pretty certain that a race with their obvious attainments would have among its achievements some form of long range detection which would enable them to find out quite easily from which sector of space they had come, and if they did find out then even the slim chance that the human race now possessed would be snuffed out before it was even given a start.

"We'll go in and have a look, Number One," he said suddenly.

"What about old faithful out there ?"

"They'll keep for the time being."

Waring gaped. His own thoughts, had he known it, had been along much the same lines as Shannon's, but his decision had been to shoot it out with the stranger and worry about the planets afterwards. "Shouldn't we get rid of them first ?" The question was out before he realised it.

"I said we're going in," rasped Shannon.

"Aye, aye, sir !" Waring glowered sullenly at Radowski who was grinning maddeningly, showing quite plainly that he was in complete agreement with Shannon's policy of 'wait and see'.

Waring pushed up the power switches and their speed mounted slightly as they headed in towards the centre of the system.

"They're dead abeam now, sir," said Steiner, "still stationary."

The *Exodus One* drifted in, closing with the outer planet as she went.

"Might as well keep going," said Radowski a few minutes later. "The outer four planets are dead, too far from the star to be much more than frozen hunks of rock; we'd better try the seventh to begin with."

Shannon nodded, "Increase power to half light," he ordered. "Head for the seventh, Mister Waring."

The star ahead began to increase in size more rapidly as they speeded up. Waring handled the controls with quick, easy efficiency as he manœuvred the huge bulk of the ship towards the dull point of light showing on the radar

screen, that was the image of their target. All the time it and it's sun grew larger and brighter, and Radowski's report a few minutes later that it could be habitable though intensely cold, brought quickening pulses to all of them.

"It's like Mars," he said, "though much colder, it's a near dead world, slight rim of atmosphere—oxygen—two small oceans, not a lot there but—"

"They're moving astern of us," broke in the staccato voice of Steiner, "dead astern and a bit faster, about fifteen million and falling."

Waring fumed as he heard the news, "Like sitting ducks, why in hell take such a risk," he thought.

Their destination loomed large on the screen as they came towards it, and Waring cut the power on the drive by degrees, grinding his teeth mentally as he did so, until at last they were cruising dead slow a bare thousand miles above the strange planet's surface.

They could see the new world through its tenuous atmosphere as a globe made up of barren looking expanses of red wastes, almost the duplicate of Mars, except that, as Radowski had said, there were two darker patches, one near each pole that were the oceans. Small oceans as he had said, but the one element that might make all the difference to any immigrants from Earth who chose to land there.

Radowski was working overtime at his instruments, and it was at his direction that Shannon ordered them into the atmosphere for a few brief minutes while samples of the air were taken. They flew round once at a mere thousand feet and returned to their original thousand mile orbit.

Every so often Radowski gave out pieces of information on the make up of the world and its conditions, finally ending up by saying, "Like I said, a duplicate of Mars only colder." He caught Shannon's questioning eye, and nodded, "Yes, sir, it's habitable—if we can get the people here—or at least a few of them."

Shannon's breath expelled in a long sigh, "We'll try the sixth," he announced, ignoring completely Waring's angry, expressive glare.

They went on, only to meet disappointment. The sixth planet was a dead, blackened hunk of rock, with no atmosphere, swinging round its sun with the same face forever turned towards it, moonlike in its make up; it was with tightening stomach that Shannon ordered them on to the next.

All the while Steiner kept his sights on the alien ship that was moving in behind them. It had stopped while they explored the seventh planet, and was now shadowing them at a range of about eight million miles. Steiner's reports began to fall on deaf ears, as all the men in the control room with the exception of Shannon, waited anxiously for Radowski's next report, and Shannon was uncomfortably aware of the huge responsibility he was taking on himself in ignoring, for the time being, the silent, and almost invisible threat behind them.

They cruised around the fifth planet in ever narrowing circles with the protector screens up, giving no sign to their shadowers, intent on their task of plotting and photographing the world below them. As they cruised the alien lay still some ten million miles away, waiting.

Radowski's reports came in slowly at first and then quicker as they got closer, and as they listened the fact built up inside them that here was what they had been looking for, a duplicate of the Earth. It was bigger, a whole lot

bigger, and its atmosphere had a slightly higher oxygen content, but it was habitable and there were no signs of civilised life. It was abundant with a host of animal life—strange animals and stranger flowers and vegetation, which they would be unable to classify without landing, and that was something Shannon had no intention of doing. Under other circumstances he would have landed and given his scientists the run of the place for a few days, but Steiner's constant reports on the alien had given him time to weigh the balances. Radowski and the others were quite satisfied with what they had got. They would have liked to look around, but under the circumstances it was unnecessary. It was their duty now to get the news back to Earth as soon as they possibly could. Almost as important as the discovery of the new system was the discovery of the alien race. Shannon wondered if they would get home.

He looked round at his officers, and said, with self-conscious inadequacy, "Well, gentlemen, it looks as if we've found it."

He paused before continuing, "The nearer planets can look after themselves for a few months. I consider it of prime urgency that we proceed home at once, and tell of our two discoveries, the one will be as interesting as the other. And now—"

"The alien, sir ?" Waring was unable to conceal his eagerness to get to grips with the major problem of the moment.

Shannon laughed outright, and nodded, "Yes, Mister Waring, the alien. We're going out—and that fast, and then see what they do."

He turned to the view port, "Light speed, Number One, and straight out."

Waring's hands ran over the control panel, and the bulk of the *Exodus One* swung out from the planet, straightened on to a course heading directly away from the star, and moved with ever increasing speed out into the depths of space from whence she had come. Steiner had his eye glued to the radar viewer which was trained on the alien ship, watching intently for the reaction they knew was bound to come.

For ten or fifteen seconds they moved out in silence, and then, "They're following, sir, fast."

"Hold your speed," ordered Shannon, quietly.

"They're closing in to ten million . . . nine million . . . eight and a half million . . ." Steiner read off monotonously from the dials.

Shannon sweated under the sudden impulse to order the ship to full speed, but he fought it down with the realisation that the middle of a planetary system was no place to start a shooting match, especially when the enemy was on your tail. There was, too, the necessity of concealing their top speed from the aliens as long as possible. He switched his thoughts to the more immediate calculation of weapon ranges,—if he'd underestimated their opponents . . . perhaps they had something which could penetrate the screen.

He heard almost dreamily, Steiner reporting that they were passing the outermost planet, and then jerked himself back to reality as he realised that now, if at all, was the supreme danger point. Probably the aliens, too, had decided that it was not good tactics to start anything until they had the depths to manœuvre in. Even as the thought crossed his mind, Steiner's voice, hysterical in its loudness bellowed the warning code, "Ambush, maximum," in Waring's direction. The first lieutenant's fingers reacted instantaneously

and the ship swung in an upward, sideways arc, off its course.

As he did so space around them was lightened by a nova-like blaze from somewhere astern, and the ship rocked under the impact of a blast of pure force that hurled it like a leaf in a storm, off its balance.

Shannon was the first to recover, "I'll take it, Number One," he said, and slid into the chair which Waring readily vacated. He took the ship up and over in a huge million mile loop, his brain ice-cool now that the storm had broken. He acted automatically, reading off the dials and meters before him, listening to the reports coming in from all parts of the ship, reporting the damage to some of the compartments and machinery, to the engines which were her life force, and to the screen which was her shield. The damage was only superficial. The screen had held, and the ship lived as an effective fighting force.

"What sort of blast was that, Steiner ?" he asked at last.

"Atom radiation—uranium type—speeded up, but on the same principle as our own I'd say," replied Steiner. "She's coming in again, farther out though."

"Get a bearing and try a blast. We'll see what their reaction is," ordered Shannon, and ten seconds later the vessel rolled under the heavy recoiled blast of the atomic radiators, while space around them flared briefly.

"Missed," reported Steiner from the view screen. "She dodged it easily, she's turning in towards us again."

Shannon swung the ship over again at the last words, and as he did so another blast of radiation shook them, though not so heavily. As it did so he feinted in, turning quickly inwards towards his opponent, seeking for an opportunity to let fly, and as he did so the alien shot obliquely up out of range and then pirouetted maddeningly above them before diving suddenly. Shannon was equal to that manœuvre and twisted the ship eel-like out of danger; he breathed heavily as he righted the ship, the alien was still astern of them, and he was well aware that he had nearly fallen into a tactical trap that could have wiped them out had he been an instant slower in recovering.

"These babies are smart," he admitted grudgingly to Waring who was occupying the second control seat, and gripping the arms to steady himself.

Shannon's brain flickered over his past battle training, sifting, considering, and discarding the stratagems that were text-book instruction back on Earth. He realised with growing certainty that four hundred years without war had stilted the war sense of the human race, now that he was under actual fire he could see how inadequate were the tactics taught by the Interplan Battle School. It had taken him just five minutes to realise it. The one manœuvre he had tried had been brushed aside with the contemptuous ease of a master fencer against a pupil, and the follow-up had come so quickly that it had been pure chance that he'd managed to avoid it. He knew that if no one else did.

Another blast rocked them as he took more avoiding action, and this time the damage reports were more serious.

"We can't stand much more of this, and we shan't get them as long as they are on our tail," remarked Waring as they went up in another loop.

"I know," snarled Shannon through clenched teeth, "and we can't run for it or they'll blast us as soon as we try and turn on to a straight course."

"Or follow us home," added Waring.

"We'll have to settle it here," said Shannon, "they know as well as we do

that they can't let us go, any more than we can let them go—now."

He pursed his lips. "One of us isn't getting out of this alive, God grant we'll be lucky, or Earth can kiss that system goodbye."

The ship shivered under yet another blast from the alien, and as he took the ship out of danger, Shannon's mind began to formulate an idea, a dim ghost of a plan, his mind leaping back over the years to his boyhood days when he read avidly the old time adventure stories, of the days when warring nations had divided the planet. There had been stories of the first world war before the conquest of space. They used to do funny things in those days if all the stories he had read were true, funny things, but they worked.

He pushed the ship into a long curving glide while his mind slipped hurriedly over the details. It was risky, devilish risky, but the situation called for something drastic. A few more blasts like that last one and there would be no need to worry about trying a plan. He swung the ship up and over again, and said to Waring as he did so, "I want supralight flares prepared aft and midships, and the next time they let go a blast, I'm going to cut down speed at once to a third of light, as soon as I start cutting down give orders to light the flares. Understood ?"

"What ?" Waring's voice was comical in it's incredulity. He goggled at his superior like a half-wit.

"You heard me, Mister Waring," rasped Shannon.

"Aye, aye, sir," Waring's inborn sense of discipline pulled him into place, and he was shouting orders over the intercom before Shannon could say more.

As he finished Shannon turned the ship on to straight course and pushed up the acceleration.

"We'll cut out the protector screen at the same time as we slow down, and focus all radiation units on the enemy."

"A snare ?" said Steiner questioning.

Shannon bared his teeth in half comical grimace, "For one of us," he replied.

They cruised straight for perhaps half a minute while below them the alien turned on to a parallel course.

"They're lining up on us," reported Steiner.

Shannon eased the ship a few degrees off course and as he did so the gap between the two ships was whitened by another scorching blast of energy. Shannon cut the power at once, and as Waring cut off the screen units a brilliant white glare announced that the flares had been set off.

Their speed dropped rapidly, and the alien came on with a rush so sudden that it brought them to within a bare half million miles of it's prey. Shannon's hands rested lightly on the firing keys of the radiation units praying that he would use them at the right moment; Waring's voice reported in dead silence that made him seem to be shouting, "Radiation units focused, sir," and Steiner said quietly, "here they come."

"She's turning broadside," Shannon said it more to himself than to anyone else, and as he said it he pressed the firing switches of his whole armament and the ship rolled under the heavy recoil while the sudden flare of atomic power blinded the watchers. There was an almost interminable silence and Shannon sat tense at the controls, waiting for the return fire which he expected any minute to wipe them out of the Universe.

Steiner's voice broke the deathly hush with a half choking, "She's gone."

Shannon relaxed and lifted his eyes heavily to the radar screen. Where previously the alien had shown as a bright spot of light there was—nothing. He switched up the screen and turned the ship at a slow cruising speed back across the spot where their opponent had been. They cruised for some time, back and forward across the area, searching for some trace as to the identity of their foe, but there was nothing save a few small eddies of electronic force, dissipating rapidly, even as they found them. Shannon heaved the ship-to some four hours later, well outside the system they had fled in such haste.

Steiner left his instruments at last. "They never knew what hit them," said Steiner. "Now we'll never know where they came from." He paused. "Seems a pity, Skipper, they could have been good guys like us."

Shannon scowled. "They hit us first," he said defensively.

"Maybe they were like us, just scared."

Shannon didn't answer. Privately he agreed, but he could never admit it. He had a vague feeling of having started something that someone else would have to finish, not very far ahead in the future. Suppose the race whose ship he had destroyed did know where it had gone and they came looking for it after a time ? He pushed the thought aside irritably, that could wait, there were more important things to worry about now.

"Do we need to go back and land in the system, Radowski ?" he asked.

The Pole shook his head, "We've got all we need right now, they'll send a

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scouting party ahead of the main body anyway, to classify the dangerous types of flora and fauna. We know it's habitable, that's all the Evacuation Council will want to know."

Shannon nodded, he felt relieved. The ship was in no state to go exploring until she had been patched up on Earth. He turned to Waring, "We'll leave, Number One," he said, "lay a course for home. Our mission is completed." He turned wearily to go below, conscious suddenly that he had been without sleep for nearly twenty-four hours, and what a twenty-four hours. He felt a hand on his arm, and realised that someone was standing close to him. He looked into Waring's flushed face.

"I'd like to apologise, sir," the words came out in a rush, "I doubted the wisdom of your judgment back there, it was unpardonable of me. That was a brilliant action, it will go down in history as a landmark in spatial warfare."

Shannon grinned wryly, "There's nothing to apologise for," he replied, "I picked you as my second before the trip began, and you have been invaluable. As for the action, Mister Waring, I didn't invent it, I merely resurrected it."

Waring's eyes flickered in surprise, "You didn't—then who did ? I never read of anything like that in the Space Manual."

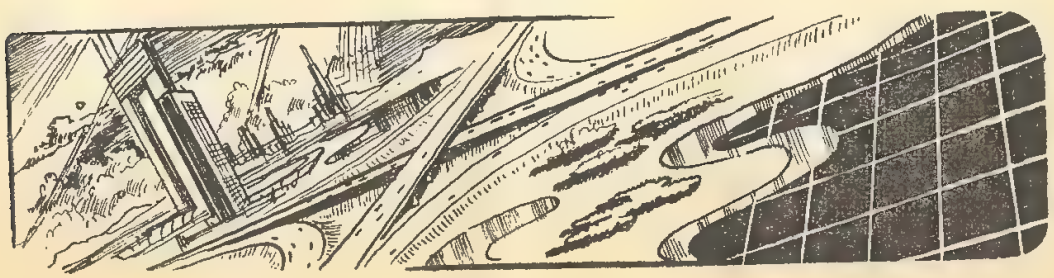
Shannon laughed, "No I guess you didn't. You'll have to go way back into the histories of the First World Wars for that," he said. "It seems that in the early part of the twentieth century when all that barbarism started, the British people had some irregular naval vessels which they called Q-ships."

"I've heard of them but I don't see what——"

"What it has to do with our fight to-day ? Well, as I recall, these Q-ships used to resemble small unarmed merchant ships travelling alone; if an enemy submarine spotted them, nine times out of ten it let go a torpedo, the Q-ship then gave a very good imitation of a sinking ship including panic-stricken sailors, and lured the sub. to the surface to finish her off with gunfire. Once the sub. surfaced it was all up, a concealed gun sprang into action and sank them before they knew what hit them." He laughed, "The only thing missing was the panic-stricken sailors, but I think we did all right without them." He yawned, aware of the over-powering lassitude which was creeping over him. "I'm going to turn in. Carry on, Mister Waring, but don't call me unless you have to."

As he went to his cabin Shannon could hear the voices of the crew somewhere near, singing, and he knew without any doubt that man's destiny was not ended yet, it was the beginning of a new era. His name and that of his ship and his crew would go down in the history of man until the end of time, as the saviours of the human race. But underneath the satisfaction of that thought was the gnawing uncertainty; what had the aliens been like ? Would he ever know just what he had destroyed that his own race might live ?

THE END



FILM REVIEW

THE DAY THE EARTH STOOD STILL

When John W. Campbell Jr., editor of *Astounding Science Fiction*, published a gem of a story by Harry Bates in the October 1940 issue, entitled "Farewell to the Master," he little realised that eleven years later a film based on that story would be vying at the box offices with another film based upon one of his own stories.

Few readers of ten years ago ever expected to see the top-ranking film companies ballyhooing science fiction, but 1951 has seen the first wave of good quality futuristic films arrive, and, judging from a recent report from Hollywood, there will be many more in the immediate future.

While changing Bates' plot considerably to conform to the more orthodox cinemagoer's expectations, 20th Century-Fox have retained much of the basic idea behind the story, and produced a film which outranks "Destination Moon," without the aid of technicolor. Britain's own Michael Rennie has the lead role of the man from another planet who arrives in Washington, D.C., from a saucer-like spaceship, accompanied by an eight-foot robot named Gort (played by Lock Martin). Klaatu (Rennie) explains that war has been isolated on his planet and that he bears a warning to Earth against interfering with other planets now that Earth has atomic weapons. In effect he is an ambassador of peace.

It not being possible to get the heads of all Earth governments together to listen to him, Klaatu disguises himself as an Earthman and attempts to interest world scientists through Professor Barnhardt (Sam Jaffe), by completing an unfinished atomic equation on the Professor's blackboard. From here on, excitement mounts rapidly as Klaatu paralyses all electrical power in the world as a sign of his own strength, and then becomes hunted by the authorities. During his flight he confides to Helen Benson (Patricia Neal), at whose home he has been lodging incommunicado, that Gort the robot has been attuned to destroy the world should anything go wrong, and gives her the code signal which will cancel the command.

In an ensuing encounter with the Army, Klaatu is killed, but Helen manages to stop Gort just as he begins his tour of destruction. The robot takes her into the spaceship and later rescues Klaatu's body, taking it to the ship, where his master is revived. Just before the spaceship takes off for its home planet, Klaatu emerges and delivers his message to the huge crowd assembled outside.

This brief synopsis of the story does not do justice to the film, which, in a quiet manner, advocates peace amongst the nations of the Earth. At a recent private preview attended by many *New Worlds* authors and artists, and technicians of the British Interplanetary Society, there were a number of delegates from the United Nations. Their opinion of the film as peace propaganda was extremely high.

20th Century-Fox, in a sincere effort to make the film as technically correct as possible, employed as technical director Dr. Andrew Herrick, associate professor of astronomy at the University of California, Los Angeles.

Dr. Herrick has long been a pioneer on rocket navigation, and worked on both Governmental and private research problems.

Many interesting items are recorded in the making of the film. The film company erected a 350-feet circumference "flying disk" on the lot to get the illusion of size when photographing the alien ship. Studio electricians used light rays direct from the star Arcturus, 32 light years away, to trip the electronic switch which lit the single lucite eye of robot Gort. To herald the approach of the spaceship to Earth, special sound effects were recorded from noise automatically broadcast to Earth from rockets fired into the stratosphere. These, incorporated into the musical score, create an extremely weird effect.

At the Ninth World Science Fiction Conference, held in New Orleans early in September, delegates saw a special screening of the film, and later unanimously adopted a resolution awarding a Certificate of Merit to 20th Century-Fox for its excellence.

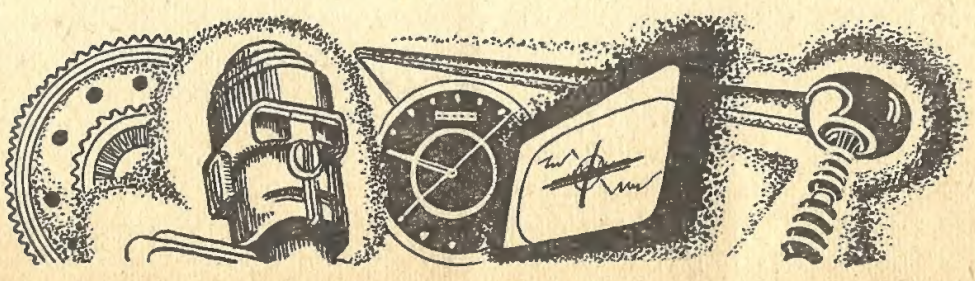
The film company were fully alive to the possibilities American fan circles could give cinema managers, and issued a publicity directive headed "Science Fiction Fans can help You Exploit——". Listing 39 fan groups in the States, the directive informs that "the science-fiction fan is legion ! Since the dropping of the first atomic bomb, they have come into their own. It was the science-fiction writer who dreamed about nuclear fission, spaceships, interplanetary travel, and many other 'fantastic' science problems. We have seen this type of writer emerge from the pulp magazines into the 'slick' publications. Publishers' statistics prove that science-fiction stories now rank over the whodunit type of fiction. The science-fiction fan is a rabid enthusiast when it comes to anything that has to do with his hobby."

And that kind of nation-wide publicity coming from a major film company shows the sincerity behind 20th Century-Fox's endeavour to make this an accepted film. They make no bones about labelling it "science fiction," but go all out to prove that science fiction has been with us a long time—and now you can at last sit back and enjoy it on the screen.

Opening on December 13th at the Odeon, Marble Arch, the film will be generally released at the end of January, playing the Gaumont and other major circuits.

Readers should watch their local cinemas for outstanding promotional displays in the foyers—some exceptional ideas are being mooted.

J.C.



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